Coffee Cultural Landscape

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An Exceptional fusion of nature,
collective human effort and culture

PAISAJE CULTURAL CAFETERO

Libertad y Orden

Ministerio de Cultura

República de Colombia

Federación Nacional de Cafeteros de Colombia

a) Description of Property

The Coffee Cultural Landscape (PCC – its initials in Spanish) is a cultural landscape in which natural, economic and cultural elements are combined with an extraordinarily high degree of homogeneity in an exceptional region in the world. It is an outstanding example of human adaption in difficult geographic conditions that led to slope and mountain coffee production. In this setting, the coffee growers' endeavors and their families have been permanently accompanied by their institutions, resulting in an exceptional model of collective action which has overcome difficult economic circumstances and aided survival in rugged and isolated conditions. As a result, coffee production based on small property ownership took hold and has demonstrated its sustainability, as much economically, socially and environmentally, producing one of the best coffees in the world. This social and economic model has also shaped a region with a high degree of cultural unity. A unique Paisa cultural identity is expressed materially by building techniques both in urban areas as well as in rural coffee dwellings; not to mention immaterially, the link between the people and coffee is clearly expressed through festivals, carnivals among other types of events.

The PCC covers a number of the coffee growing areas in the Caldas, Quindío, Risaralda and Valle del Cauca departments[1], tucked into the central and western foothills of the Cordillera de los Andes. The region has traditionally been identified nationally and internationally as the *Eje Cafetero* or Coffee Region and, more recently, as the *Triángulo del Café* or Coffee Triangle. The *Eje Cafetero* concentrates most of the country's coffee production and it is where "more than anywhere else in Colombia, people's idiosyncrasies are linked to coffee"[2].

1. Administrative territorial unit, equivalent to a province or state in other countries.
2. Ramírez , 2002, p. 1.

Coffee growing in the region is characterised by small-scale farm owners. Chinchiná, Caldas.

Coffee plantations are prevalent in the PCC area. Buenavista municipality, Quindío.

Since just a few decades after the arrival of the settlers from Antioquia[3] in the XIX century, the region's economy and culture have revolved around coffee. This landscape has been shaped by the exceptional dynamism given by multiple processes beginning with the planting of the very first coffee tree and the building of the first rural dwellings, through to the development of coffee transport, processing and trade infrastructures, and the subsequent transformation of production techniques. The combination of a deeply-rooted coffee tradition with the legacy of Antioquian colonization, has played a fundamental role in defining the regional culture, and generating rich manifestations of all aspects, from music and food to architecture, passed down from generation to generation.

Coffee is grown on hills and mountains. Marsella, Risaralda.

3. These settlers began populating the region in the XIX century. This process is denominated the Antioquian Colonization and will be further described in the section on History and Development.

As a productive landscape, the PCC also contains noteworthy natural and aesthetic attributes. One of its kind in the world, this region houses a significant number of native forests and biological corridors, considered strategic for the conservation of global biodiversity. It combines a range of shades of green, and variety of visual perspectives with its convergence of valleys, where gentle slopes juxtapose with precipitous heights, glaciers, and volcanoes that adorn the highest peaks of the Andes. "Coffee, bamboo (also know as *guadua)*, mountains, mixed together in a sea of greens is what enamoured the first settlers who—equipped with their Antioquian courage—took their culture to the Eje Cafetero and began to build the green heart of Colombia"[4].

4. UNDP, 2004, p. 126.

The Cultural Coffee Landscape is considered strategic for environmental conservation, thanks to the water sources that run through it and the presence of native forests. Santa Rosa, Risaralda.

The prevalent fog on the mountain tops so typical of the region was described by Sarmiento (1995) as: “The fog, sporadic and transient, is part of the architecture here. It is not the same to see the towns under a blue sky that makes them glisten in the light, as it is to see them wrapped in the silky sheet of fog, and soaked by the drizzle that blurs the outline of the houses making them look as though they were about to disappear… When these wavy roads and mesmerising slopes are enveloped by the gentle fog, the landscape is another”.

When the mountain ridges are covered by blankets of fog, the landscape looks different, it looks magical and dream-like. View of the Los Nevados National Natural Park from Manizales.

Life in the PCC is tranquil, lighthearted and full of optimism. Salamina, Caldas.

Although most of the PCC territory is made up of coffee plantations, the proposed Cultural Landscape to be registered in the World Heritage List corresponds to the most representative area, according to a delimitation model used to define the Principal Area and the Buffer Zone designed by two local universities - Universidad Católica Popular de Risaralda and the Universidad Tecnológica de Pereira[5]. As the authors point out, it is a simulation model "which tries to identify the areas where a complex phenomenon (the coffee-growing culture) is located from a series of qualities of interest, which are expressed in thematic maps constructed from sets of data from different sources."[6]

First, a common set of characteristics of interest previously defined by the Regional Technical Teams of the PCC (one for each of the departments involved), which included professionals from the areas of architecture, anthropology, economics, history and environmental sciences, was agreed upon. From this input, the regional teams carried out technical discussions during 2007 with the aim of selecting the qualities and adjusting some of the criteria used in the original model. Indeed, following these intense work-sessions, the regional teams established a total of sixteen variables which tangibly express the exceptional, universal qualities of the PCC. Likewise, they selected seven to be included in the demarcation model. All the attributtes that were agreed-on are presented in the following table; those used to identify the principal area and buffer zone are marked by an asterisk.

5. Universidad Católica Popular de Risaralda et al (2006)
6. Universidad Católica Popular de Risaralda et al (2006), p. 52.

Towns are usually built on the higher parts of mountains. Santuario, Risaralda.

Salamina's Cathedral, in Caldas. Declared a National Heritage.

Table 1. Attributes agreed upon by regional PCC teams

1. Mountain-grown coffee *	9. Archaeological heritage
2. Coffee institutions and related networks *	10. Concentrated population and fragmented property structure
3. Predominance of coffee crops *	11. Architectural heritage
4. Down-slope cultivation *	12. Influence of modernization
5. Average age of coffee plantations *	13. Tradition in coffee production
6. Natural heritage *	14. Coffee smallholdings as land ownership system
7. Hydric availability *	15. Multiple crops
8. Urban heritage	16. Sustainable technology and production systems in the coffee production chain

Replica of a traditional coffee town. National Coffee Park, Montenegro, Quindío.

The following table includes the scores established for measuring the attributes.

Table 2. Agreed scoring system for measuring PCC attributes

Attribute	Indicator	Category or class	Score
1. Mountain-grown coffee	Average altitude above sea level	1,000 - 1,400 masl[7]	1
		1,400 - 1,800 masl	3
		> 1,800 masl	2
2. Predominance of coffee crops	% of the rural area with coffee crops	< 0.1%	0
		0 - 30%	1
		30% - 60%	2
		> 60%	3
3. Down-slope cultivation	Mean slope	0 – 25%	1
		25% - 75%	2
		75% – 100%	3
		> 100%	1
4. Average age of coffee plantations	Predominant age of the coffee plantations	0 – 2 years	3
		2 – 5 years	4
		5 – 9 years	2
		> 9 years	1
5. Natural Heritage	Ecosystems of environmental interest	Present	1
		Absent	0
6. Hydric availability	Supplying basins	Present	1
		Absent	0
7. Coffee Institutions	Coffee growers Municipal Committee	Present	1
		Absent	0

Thus, according to the model, each "area unit" or rural district, locally known as *vereda*[8], received a score according to the category or class it belongs to. The scores were then added up and the principal areas and the buffer zones were selected according to the total points obtained (for a better description, please see Universidad Católica Popular de Risaralda et al, 2006). Likewise, it is important to point out that during the implementation of this model, the technical teams made some adaptions to better deal with regional specificities and the availability of information for the construction of indicators. Finally, Unesco criteria which describe the buffer zone as an area surrounding the property intended for its protection was taken into consideration. Thus, the districts which border the Principal Area were selected.

7. Meters Above the Sea Level

8. A vereda is the smallest administrative territorial unit in Colombia much like a neighbourhood or a rural settlementes, made up of rural properties.

PCC houses are characterised by their mud roof tiles, their vivid colours and their harmony with the environment.

As a result of this process, the Property's principal area defined includes 6 zones which are deemed the most characteristic of the Coffee Cultural Landscape, as they contain its most representative atributes. Nonetheless, it is important to highlight that, despite the physical separation of some zones of the principal area, they are evidently part of a common cultural complex. Their high level of similarity can be clearly seen in their common attributes and the relation between the inhabitants and their common cultural heritage. For these reasons, the description of the landscape throughout this dossier is that of a single, unique cultural landscape. One could, however, point out the following elements of each of the following six zones:

Zone A

This corresponds to the municipal areas of Riosucio and Supía in the department of Caldas, including the locality of San Lorenzo. It has a altitude of 1,545 meters above sea level[9]. Indigenous reservations are found in this zone as well as in that of Quinchía, which principally belong to the Embera community. This zone is noted for the character of its landscape and the valuable history of its indigenous population. There is also an Afro-Colombian population which was initially linked to mining. When the Antioquian Colonization reached these territories during the 19th century, different plots of land were demarcated. Over time, they led to interesting cultural expressions. The next paragraph describes the Carnival of Riosucio, which is, perhaps, one of the most interesting ones:

> "The Carnival of Riosucio, as an exceptionally valuable expression of popular culture and tradition, unites the cultural heritage of the region and the country from the perspectives of history, enthnology, art and literature; due to its importance, it has helped strengthen Riosucio's cultural identity, which is characterized by its indigenous roots. The permanence of this celebration is apparent in the care which is taken of mantaining its ritual and traditional structure, which is the fundamental base for its celebration; (…).
>
> The CARNIVAL is the colective expression of both the social and spiritual life of two towns marked by an irreconciliable hatred. In order to be united and share a single space, they created a symbolic figure which would help them develop a peaceful coexistence. This figure was materialized in the Devil, and different forms of popular expression were created around this figure.

The CARNIVAL of Riosucio as an expression of a tradition with incomparable significance contains the following concepts:

1. In the Cultural History of Riosucio, it is a cultural expression with over five hundred years of history.
2. For the town's inhabitants it represents an encounter with the most profound roots of their spirituality and mestizaje[10].
3. It is a source of inspiration and cultural exchange which permit the exhibition of highly creative acts undertaken by the "hacedores de la fiesta" or festival-makers (musicians, writers, cuadrilleros or members of carnival groups, among others)

9. The data regarding altitude above sea level for each area corresponds to the value of the pixel in the centre of the indicated zone.
10. Refers to marriage or mixing between different races or ethnic groups.

4 It is a space where diverse activities take place and a countless number of people gather from different parts of Colombia every second year (odd-numbered years) to share peacefully and harmoniously the commands of brotherhood expressed by their Devil.

5 In its current cultural and social role the CARNIVAL is the expression of daily activities. Critical opinions about the socio- p o l i t i c a l and cultural events of the city, the country and the world generate reflection which can be seen in the children's "matachinesco" acts and the CARNIVAL decrees.

6 It is supported by a traditional structure, and takes place in a coherant and interrelated manner. Likewise, it is an opportunity for economic development to improve the quality of life of the region through sustainable use.

7 It is permanent and living testimony of ancestral traditions and wisdom; dignifying magical and religious beliefs and rituals which are present in oral literature, dances, myths, legends and customs and their associated elements (costumes, musical instruments, foods, among others) glorifying the cultural memory of Riosucio"[11].

The Carnival of Riosucio was declared a Property of Cultural Interest in 2006 according to Resolution No. 0011.

Zone B

This corresponds to rural areas of the municipality of Quinchía and the locality of Naranjal in the department of Risaralda. Quinchía is located at an altitude of 1,825 meters above sea level, and has an average temperature of 18 degrees centigrade. In the locality of Naranjal are plantain and yucca crops from which a large quantity of starch is extracted. Coffee of excellent quality is produced in the municipality, which is also important for its sugar cane, blackberry and asparagus. From an archaeological perspective, it is potentially fascinating as the region was inhabited by the Guaqueramas and Tapascos, indigenous groups related to the Ansermas and the Irra. The indigenous populations were dedicated to the exploitation of alluvial gold, as well as the mining and commercialization of salt with other groups of the region. According to Albeiro Valencia Llano[12]: "the indigenous peoples considered that possessing salt mines was one of the greatest riches, and hence they worried about controlling this source of power."

Zone C

This corresponds to rural areas of the Central Cordillera of the municipalities of Marsella, Pereira and Santa Rosa de Cabal in the departament of Risaralda and the municipalities of Aguadas, Chinchiná, Neira, Palestina, Pácora, Salamina y Villamaría in the department of Caldas. It includes the urban ares of the municipalities of Chinchiná, Marsella, Neira, Palestina, Pácora and Salamina, and, as a consequence, the historic center of the municipality of Salamina, declared a Property of Cultural Interest at national level[13]. In this zone, the altitude oscilates principally between 1,500 and 1,900 meters above sea level. The economy of these municipalities revolves around coffee, even though tourism has recently become more important. The towns of the zone clearly represent the deeply rooted traditions of the coffee-growning populations of the middle of the 20th century and environmental elements have an important part in these characteristics.

The municipality of Santa Rosa de Cabal which was fundamental in the process of Antioquian Colonization, is located here. It was from this area where the migrants departed to the Risaralda Valley as well as the founders of most of the towns in the north of the department of Valle del Cauca, such as El Cairo, Ansermanuevo, Versalles and El Águila among others.

11. Please see Alcaldía Municipal de Riosucio, 2007. Corporación CARNAVAL DE RIOSUCIO, Secretaría de Cultura Departamento de Caldas, Coordinación de Cultura y Turismo de Riosucio, ,. 2007 "PLAN DE SALVAGUARDIA. PROTECCION Y YREVITALIZACION DEL CARNAVAL DE RIOSUCIO 2007-2017REVITALIZACION DEL CARNAVAL DE RIOSUCIO 2007-2017"
12. Gobernación de Caldas,2005
13. Resolution 0087 issued in 2005 by the Ministry of Culture.

The historic centres of Aguadas and Salamina, located respectively in the buffer and principal zone of this area, are organized according to the Spanish grid model, which, towards the outskirts, becomes rather irregular to adapt better to the topographic condititions of the terrain and the old access roads. These elements together with architectural ornaments express cultural values aesthetically and historically. As Nestor Tobón stated: *"the dissimilar topographical circumstances lead the urban area to furnish an infinite range of surprises to the spectator. There, every corner, each street, each crossroad has its own aesthetic and visual value and, together, there are surprising antagonisms between the flat and the rugged, the refined and the simple, muted colors and aduacious color combinations"*[14].

Zone D

This corresponds to rural areas of the Central Cordillera of the municipalities of Armenia, Calarcá, Circasia, Córdoba, Filandia, Génova, Montenegro, Pijao, Quimbaya, and Salento, as well as rural areas of the municipality of Pereira in Risaralda and Alcalá, Ulloa, Caicedonia and Sevilla in the department of Valle del Cauca. It also includes the urban areas of Calarcá and Montenegro. "It also includes the urban area of Montenegro. They are located in altitudes between 1,200 and 1,550 meters above sea level."

The region of Quindío was inhabited by the Quimbayas, one of the most important indigineous groups of the country. Their legacy is well known due to their artistic and cultural expression. Due to its location between the east and west of Colombia, it was a required route for people during the period of Antioquian Colonization in the 19th Century, at time when most of the municipalities were founded. The cultivation of coffee and the boom of the coffee-growing economy brought rapid economic and demographic development. At present, this zone represents much of the tourism industry in the region.

Zone E

This zone corresponds to rural areas of the municipalities of Trujillo and Riofrío in the department of Valle del Cauca, with an altitude of 1,370 meters above sea level. In this zone the predominance of coffee-growing is due to the location of Class 1 soils (which represent the best agricultural conditions for this crop). Likewise, protected natural areas, such as the Pacific Forest Reserve in the municipalities of Riofrío and Trujillo, are especially important. One of the outstanding characteristics of this zone is its visual diversity. As the local technical team points out points out "... it presents the most varied range of views far and near. A range of landscapes can be viewed from above (the cordillera) or from below (geographical valley). When one observes from the geographic valley, elements or factors become important whose scenic beauty could not be perceived from the any point in the cordillera[15]".

14. Tobón, 1984
15. Final Report of Paisaje Cultural Cafetero in the department of Valle del Cauca, 2007.

Zone F

This zone corresponds to rural areas of the Western Cordillera of the municipalities of Anserma, Belalcázar, Risaralda and San José in the departament of Caldas; Apía, Balboa, Belén de Umbría, La Celia and Santuario, in the departament of Risaralda and of the municipalities of Ansermanuevo, El Águila, and El Cairo in the departament of Valle del Cauca. It also includes the urban ares of Apía, Belalcázar, Belén de Umbría, El Cairo, Risaralda, San José and Santuario. Consequently, the urban historic centre of El Cairo (department of Valle del Cauca) is also a part of the Principal area. This last centre was declared Property of Cultural Interest at a municipal level and its arquitecture is very homogeneous. It is a clear example of coffee-growing, the principle economic activity, which is closely linked to the environmental conditions of its location.

This zone is characterised by a mountainous relief which corresponds to the Western Cordillera; altitudes oscílate between 1,000 and 1,900 meters above sea level with areas which are considered 'hot' (approximately over 24 degrees centigrade) and 'medium' (approximately between 17 – 24 degrees centigrade) due to altitude. They are areas with great biodiversity due to proximity of the Pacific Ocean. The towns and inhabitants here have an inseparable relationship between their location and landscape, their environmental system and, especially, their economic system. There are many possibilities for appreciating the coffee-growing landscape. For example, in the municpality of Risaralda, from the Santana Peak located at 1,900 masl., it is possible to observe the Risaralda River Valley, the Cauca River Caynon, the north of the department of Valle and the foothills of the Western and Central Cordilleras. The municipality of Belalcázar is located in what is known as Ansermas Country. The Ansermas, who were known as the "Lords of Salt," were organized in cacicazgos (tribal units), are described by Albeiro Valencia Llano[16]:

> *"These confederated or semi-independent cacicazgos (tribal units), are located in an immense territory between the basins of the Cauca River to the east and the Risaralda River to the west. They reached Caramatas to the north and the Chocos to the west; to the south they extended along the entire Risaralda River Valley up to its mouth (…) The caciques' houses were big and, together with other smaller houses around them, formed nuclei around which there was a plazoleta lined with tall bamboo driven into the ground and headed with the skulls of their enemies. Some of these bamboo stakes had holes, and when the wind penetrated them, it produced a special music. This filled the Spanish with dread when they invaded the zone."*

Anserma is, additionally, one of the oldest towns of the region. It was founded as "Santa Ana de los Caballeros" on the August 15th 1539. It has a valuable historic archive with chronological historic documents. The attested continuous ecclesiastical history from 1717, clearly proves the uninterrupted existence of the city. Anserma was also the epicenter of waves of Antioqueño colonization towards the south and west which produced the founding of towns such as Apía, Santuario, Belalcázar and Risaralda.

The landscape is thus principally rural, although it does include some towns or municipalites. The defined rural area contains 411 veredas in 47 municipalities, extending over 141,120 hectares, and includes approximately 24,000 coffee farms, which house around 80,000 people. The landscape also includes 14 urban centres with a collective population of over 220,000 inhabitants. Some of the urban centres in the principal and buffer zones have historic centres or properties of cultural interest (Aguadas, Pácora, Salamina, Belalcázar, Marsella, Santuario, Belén de Umbría, and El Cairo). Towns included in the principal area are located within the delimited rural area. It is worth emphazing that there are certain historic centres of urban properties of cultural interest in the principal area, which have been so declared at either a national or a local level. They are the historic centres of Salamina and El Cairo[17]. The Buffer Zone is made up of 447 veredas, extending over 207,000 hectares, and 17 urban centres. Finally, the six zones communicate by the road from Cali to Medellín and by the road from Armenia to Pereira and Manizales. Topographical conditions make the road network complicated but it reaches all areas.

16. Various authors, Gobernación de Caldas, 2005.
17. Please see the Statements and details of the mentioned urban centres in the digital files annexed on CD1.
18. See Chapter 3 Justification.

The efforts made by Colombian coffee growers to produce a top quality coffee can be apreciated every step of the way. Apía, Risaralda.

Following is a description of the four exceptional attributes of the PCC stated in the Declaration of Universal Exceptional Value[18] and other important characteristics of the site.

I) Human, Family, Generational, and Historical Effort Put into Sustainable Production of Quality Coffee

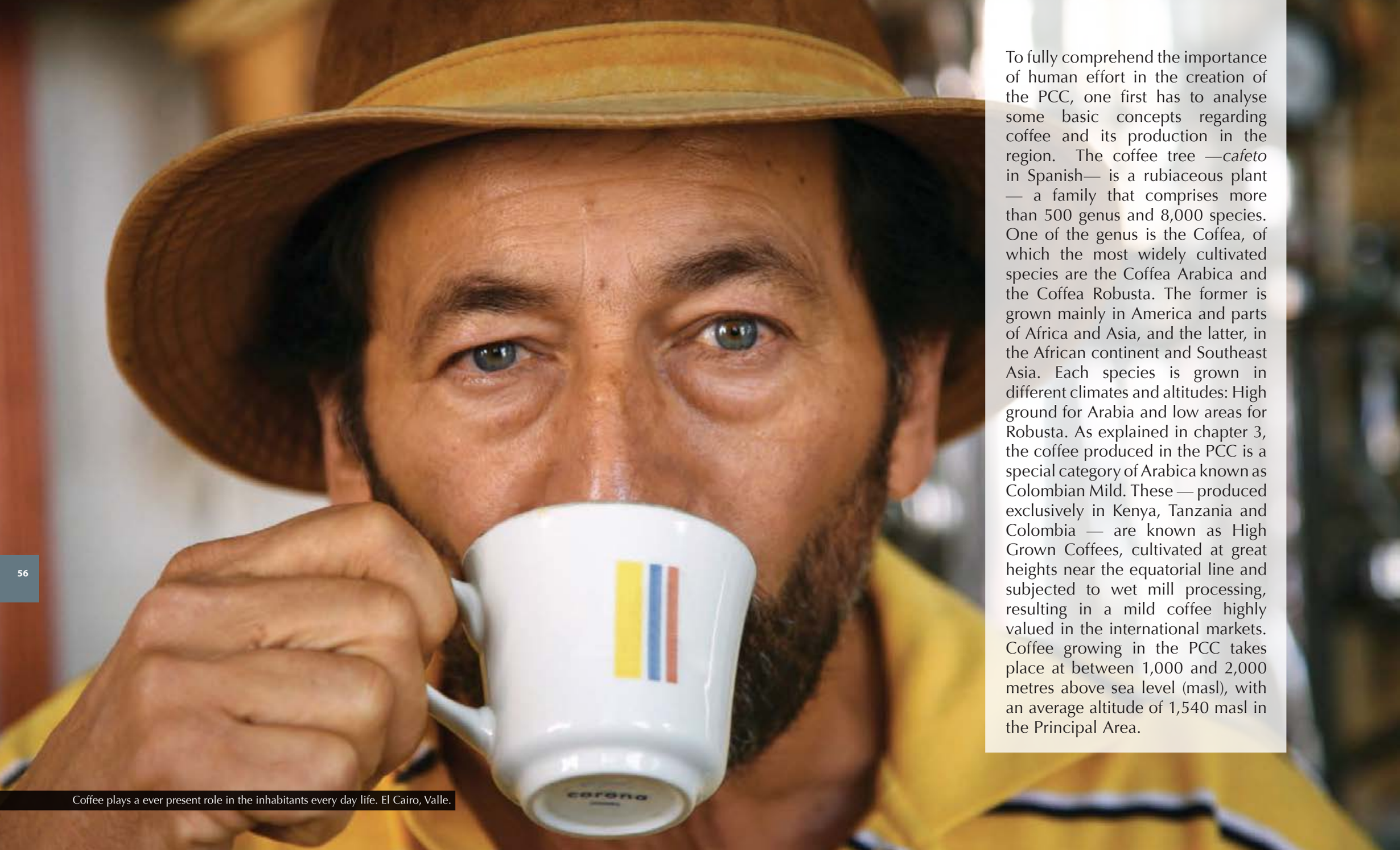
The PCC reflects over 100 years of ceaseless striving in adapting coffee crops to the complex conditions imposed by the Colombian Andes. It epitomizes the human effort that generations of coffee farmers and their families have put into the land in order to procure their sustenance in a sustainable manner, and is illustrated by the coffee crops in high, broken terrain planted in a symmetrical layout, the low level of mechanization, and the loyalty of the producers despite the changing climate of international coffee markets.

18.See Chapter 3 Justification.

The beneficio and post-harvest processes are fundamental in guaranteeing good quality. Trujillo, Valle.

The 24,000 farms in the PCC Principal Area are one the main sources of income for the region. Other crops such as corn, beans, plantain, and other subsistence products are grown in the landscape, but coffee is, of course, the dominant crop covering 57% of the total area of the coffee farms. The PCC is not the only coffee growing area in the country, but this region concentrates over a third of the national coffee production (around 35%), which explains why it has permeated the inhabitants' social life and culture to such a high degree.

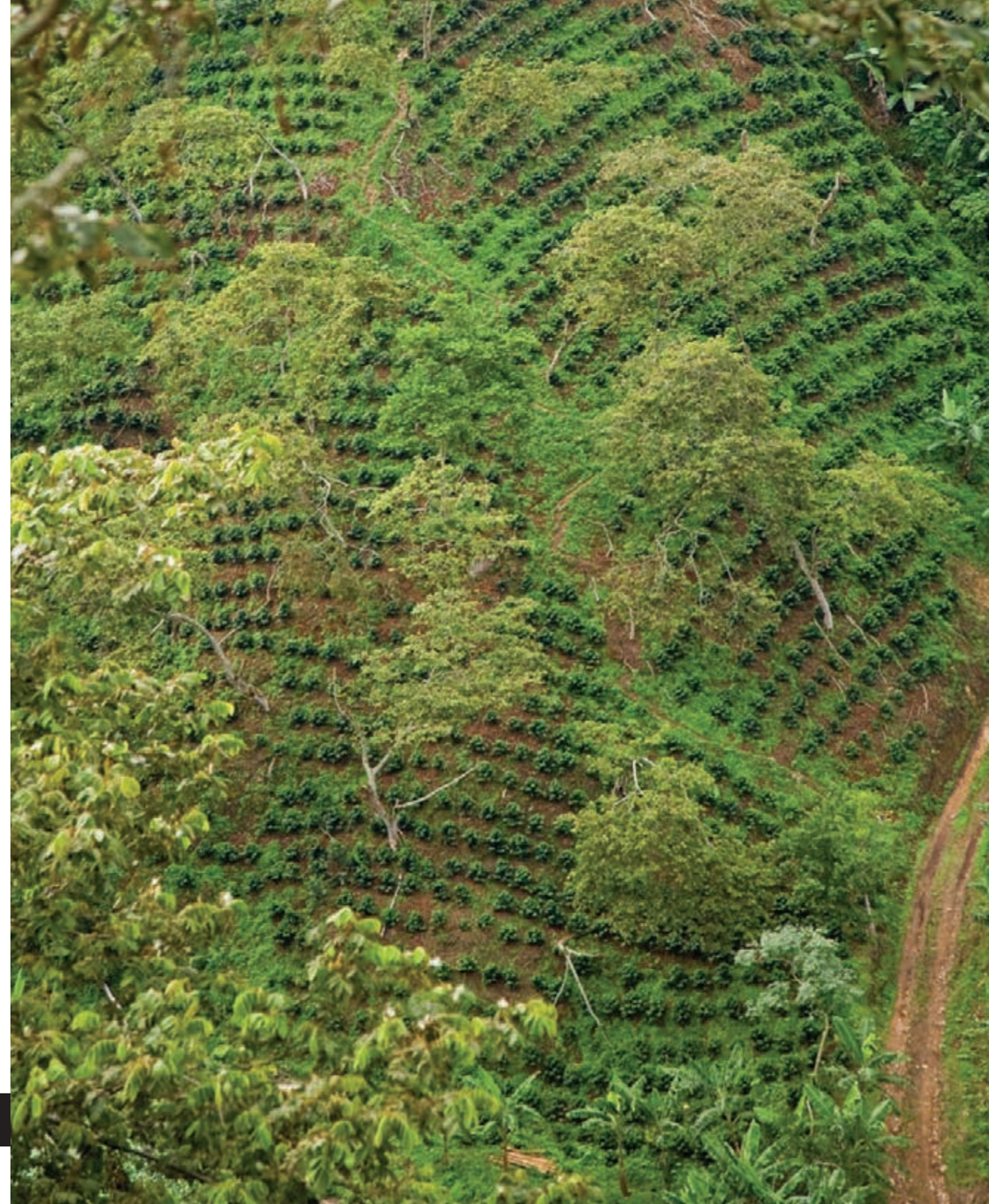
Plantain is one of the main crops associated to coffee in the region. Rural area of Pereira, Risaralda.



Coffee plays a ever present role in the inhabitants every day life. El Cairo, Valle.

To fully comprehend the importance of human effort in the creation of the PCC, one first has to analyse some basic concepts regarding coffee and its production in the region. The coffee tree —*cafeto* in Spanish— is a rubiaceous plant — a family that comprises more than 500 genus and 8,000 species. One of the genus is the Coffea, of which the most widely cultivated species are the Coffea Arabica and the Coffea Robusta. The former is grown mainly in America and parts of Africa and Asia, and the latter, in the African continent and Southeast Asia. Each species is grown in different climates and altitudes: High ground for Arabia and low areas for Robusta. As explained in chapter 3, the coffee produced in the PCC is a special category of Arabica known as Colombian Mild. These — produced exclusively in Kenya, Tanzania and Colombia — are known as High Grown Coffees, cultivated at great heights near the equatorial line and subjected to wet mill processing, resulting in a mild coffee highly valued in the international markets. Coffee growing in the PCC takes place at between 1,000 and 2,000 metres above sea level (masl), with an average altitude of 1,540 masl in the Principal Area.

The entire PCC is situated on the slopes of the *Cordillera Central* and *Cordillera Occidental* of the Colombian Andes. Given the climate, soils, and hydric systems, the production of high quality coffee has been adapted to a particularly challenging topography. The location adds another element to the landscape: the predominance of ***coffee growing on steep slopes*** (with average inclinations close to 50%), which has had significant effects on the development of this activity. Firstly, it has prompted producers to implement selective weeding, the preservation of adequate levels of shade, and appropriate soil conservation and layout techniques to prevent the risk of superficial erosion. The slopes also hinder mechanisation and, thus, lead to a greater necessity for *campesinos* and their families as manual workers to undertake highly labour intensive farming processes. Coffee growing is one of the primary sources of employment in the country, covering 17% of the total national employment rate in farming. However, in spite of the low mechanisation levels generating higher production costs, the PCC coffee growers have been able to turn this apparent disadvantage into an added value for their product, as working manually (carefully and meticulously, particularly when it comes to collecting ripe coffee cherries) has positioned the coffee from this region among the best in the world.



The producers have adopted planting techniques that make slope coffee plantations a viable option. Anserma, Caldas.

The dedication of Colombian coffee growers is evident in harvesting the ripe coffee cherries one by one. Trujillo municipality, Valle.

The region's rainfall patterns are another reason behind the importance of labour intensive manual work. The Intertropical Confluence Zone passes over this region twice a year, generating different cycles of flowering and fruit ripening, whereby at any given time the trees will harbour flowers, and both ripe and unripe fruits. Harvesting in such circumstances has to be selective, entailing a greater human effort if quality and the growers' future income are to be preserved.

Technified coffee growing is also prominent in the PCC. Within this context, full-sun crops exist mainly in the east of the landscape—Caldas—whilst the central and western areas prefer shade or semi-shade systems. The latter consists in planting trees around the coffee plantations in order to block the sun's rays, reducing coffee yields, but increasing the life span of the plants. How much shade is required depends on slope inclination, altitude, soil quality, average cloud cover and rainfall patterns.

Shade systems, semi-shade systems and full-sun exposure systems are all to be found in the PCC and used according to altitude, slope inclination, soil quality, and rainfall patterns.

Small and medium-size production units are typical in the PCC. This property structure, established by the early settlers[19], has been consolidated through land ownership fragmentation processes, intensive manual work, and relatively low costs of entry. The two latter elements generate a structure of production costs with a high component of variable costs, which does not favour large plantations. In fact, the average farm size in the PCC Principal Area is a mere 4.6 hectares, of which 2.6 are planted with coffee trees. This ownership pattern is called smallholdings division and it reflects an important redistribution and democratization of rural property[20].

This small-scale production is distinguished by its family-based workforces, whereby the producer and his or her family all work on the farm. Most families tend to live on the premises and so are able to constantly supervise their coffee plants and other crops. Only when the production cycle is at a peak, workers from outside the family are hired—on a temporary basis—to help with harvesting.

19. This process—further described in the section on History and Development—is called the Antioquian Colonization and corresponds to the occupation of the territory made up of what are now known as the Caldas, Quindío, Risaralda and the North of Valle departments, throughout the XIX century by the inhabitants of Antioquia.
20. Universidad Nacional et al, 2006.

Small and medium scale farms predominate in the area. Santuario, Risaralda.

Let it be said then that the superior coffee produced in the PCC is the result of the growers' arduous labour and dedication in spending long working days—with their families—preparing the seedbeds and *almácigos*[21], preparing the soil, sowing and looking after the coffee trees[22]. After two years of permanent care the coffee tree will be ready for its first harvest. The coffee growers will select and pick the ripe fruits by hand to then process them[23], dry them, and sell them to coffee growers' cooperatives or to private agencies.

This living landscape inhabited by hard working people is a reflection of historical, natural, and economic factors that have given rise to a region of small-scale owners who have woven a social network around the production of a high-class coffee and their environment.

21. The coffee grower begins the cycle by planting the seeds in a germinator that will protect them and provide it with the necessary nutrients. The plant is then transplanted to plastic bags full of earth and organic matter known as *almácigos*. Six months later, the young plant is planted in the plantation.

22. The young coffee bushes need constant care in order to grow into healthy plants. The farmers' intensive manual work activities include weeding, fertilization, and knows as *beneficio*.

23. The milling process, also known as *beneficio*, includes activities such as the depulping, fermentation, demucilaging and washing.

The coffee growers' manual work is present in every stage of the cultivation process, from the selection of plants that are to be taken to the fields.

Every step, from planting the trees to harvesting is done with care and dedication.

This living landscape inhabited by hard working people is a reflection of historical, natural, and economic factors that have given rise to a region of small-scale owners who have woven a social network around the production of a high-class coffee and their environment.

The coffee growers know that an adequate process of *beneficio* and drying can help them to guarantee the quality of their coffee and, therefore, secure their income.

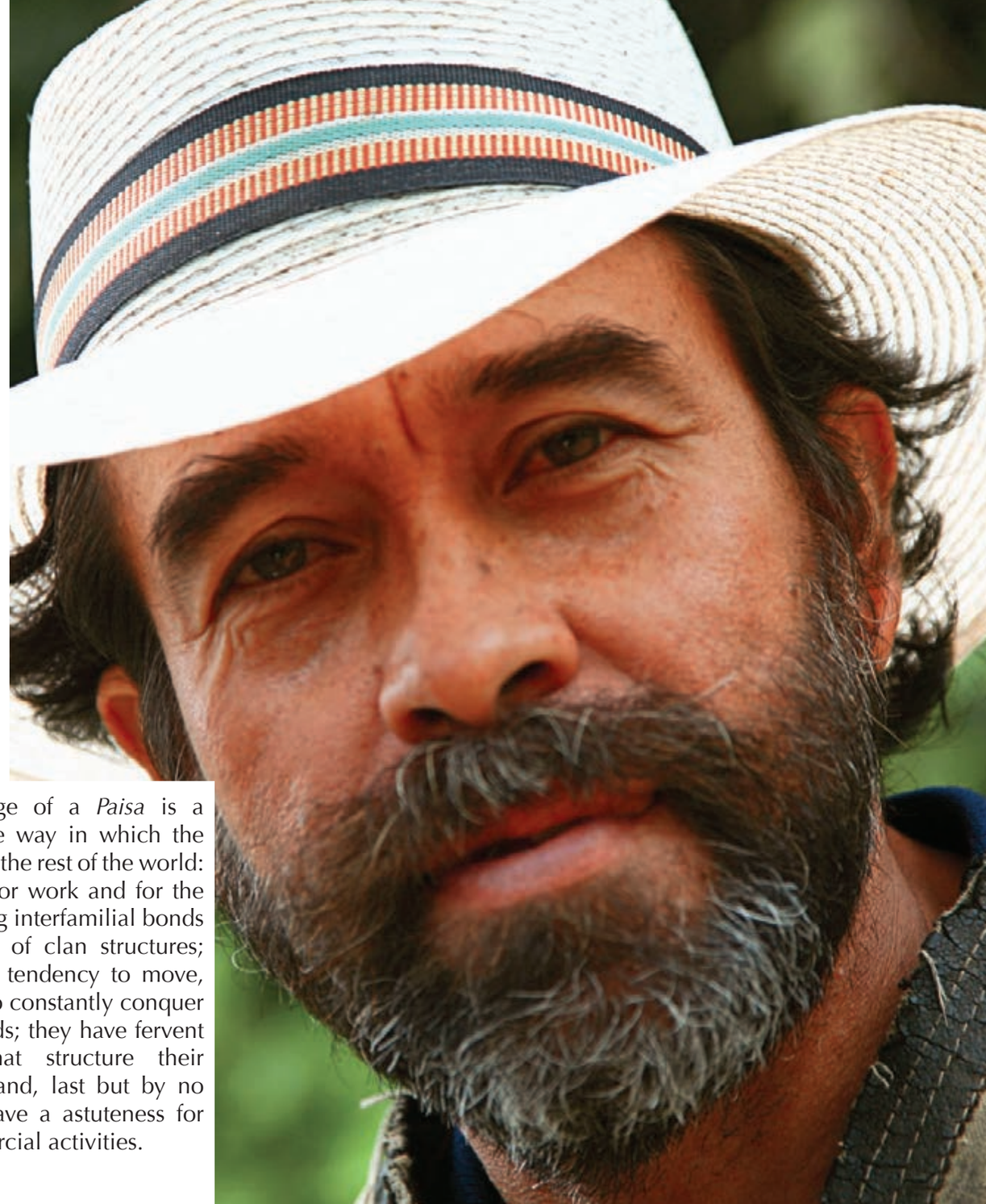
II) Coffee Culture for the World

> "For Colombia, coffee is much more than a mere export product. It is first and foremost a social, cultural, institutional and political network that has served as a base for democratic stability and national integration".
>
> (*Comisión de Ajuste de la Institucionalidad Cafetera*, 2002).

All things cultural in the PCC are closely linked to the Antioquian colonizers who settled in these rugged mountains in the XIX century, once mining lost its status as the main economic activity. The colonization brought with it an enterprising people—now known as *Paisa*—who wanted to own land and have economic independence. The modern day cultural identity of the PCC inhabitants is rooted in the *Paisa* identity, noted for its pragmatism, its hard-working people, enterprising and adventurous spirit, and business-mindedness[24].

Coffee is an essential part of the culture of the region.

24. Zuluaga, 2007

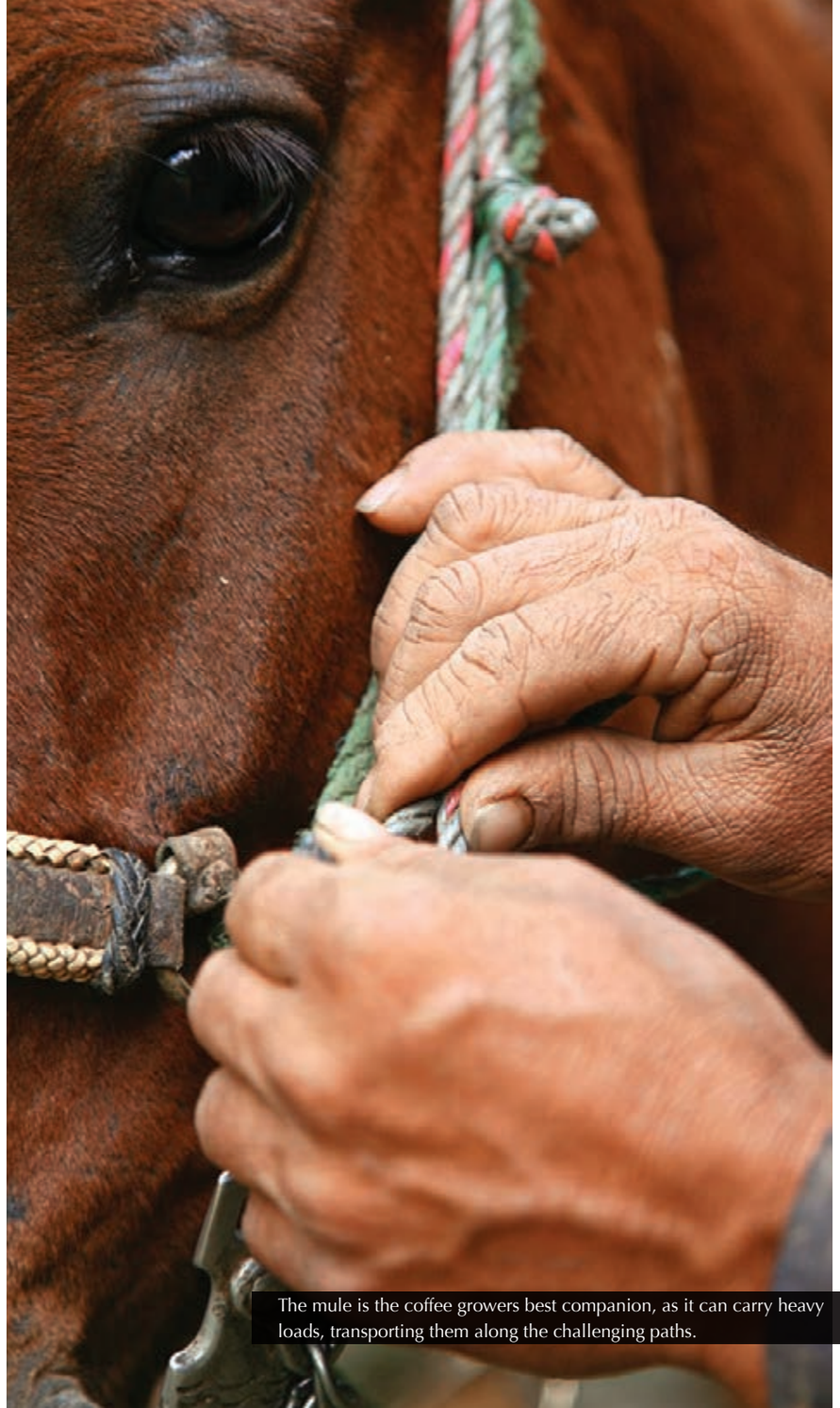


The traditional image of a *Paisa* is a true reflection of the way in which the community relates to the rest of the world: they profess a love for work and for the land; they have strong interfamilial bonds that are reminiscent of clan structures; they have a marked tendency to move, which allows them to constantly conquer or colonize new lands; they have fervent Catholic beliefs that structure their everyday activities; and, last but by no means least, they have a astuteness for business and commercial activities.

Within this framework of cultural attributes, coffee growing became an important source of employment for the available workforce and a substantial income generator. It allowed the settlers to constantly and intensively exploit the land without having to sacrifice their subsistence crops. The importance of this prized crop transcends the economic arena as many traditions and cultural manifestations have developed around coffee and have been passed down through the generations. Following are a few examples:

- **Important Figures and Objects.** Certain elements from the colonization period have, over time, become cultural icons: the pack-mule driver, who together with his mules and oxen helped to open new pathways to the new territories; the mule, "inseparable companion of the mule driver" that represents "the strength and resistance of a pack animal, able to move through the most rugged and dangerous heights of the Colombian Andes" (Botero, 2007); the axe and the machete, which were instruments used to open paths and to weed the plantations; the jeep willis, also know as yipao or jeepao, a North American vehicle from the forties and fifties of the previous century, that is still used as the main means of transporting coffee, people and other loads around the rural areas; and Juan Valdez, a symbol that identifies Colombian coffee growers around the world.

- **Myths and Legends.** According to tradition, scary spirits and diabolical figures known as Madremonte, Patasola, Hojarasquín del monte, Mohan or Muán, and Putas, live in the mountains making their daunting appearance when provoked. Although they are not directly associated to coffee and some of them are, in fact, universal, they were recreated with elements from the *Paisa* imaginary and they still "exist" in the rural areas.



The mule is the coffee growers best companion, as it can carry heavy loads, transporting them along the challenging paths.

Guadua is widely used for all sorts of constructions and for making domestic utensils and handicrafts.

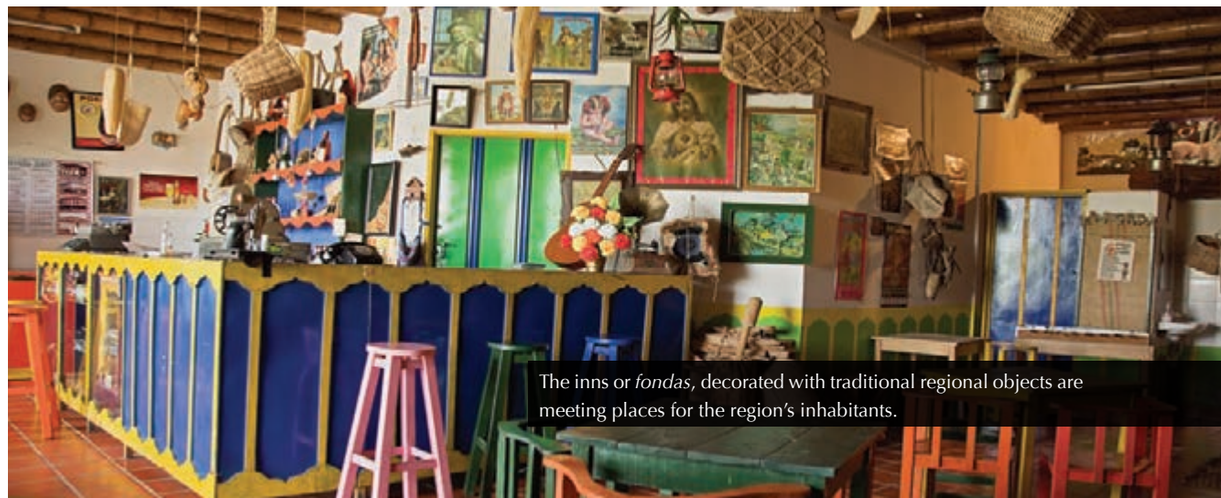
Culinary Knowledge. Food in the region is principally *Paisa* or *Montañera*. It is famous for quantity, preparation methods, presentation, colour and aesthetics, and is a reflection of the producers' auto-sufficiency, as dishes include, principally, the crops grown on the farms here. As highlighted by Macía (2006, p. 267), coffee growing and especially harvesting "have led to buying, storing, cooking, presenting and food-distribution techniques that are very particular to the region, as illustrated, for example, by the *cuarteles* or *alimentaderos*—special places where food is stored and where the hired harvesters are cooked for and served.

Traditional Sites. Many of these, such as the *fondas camioneras* or roadside inns in the rural areas, and *cafés* in the urban areas, were and are still meeting points for economic, social and recreational activities. The *fondas* played "an intermediary role in the trade circuit between the small-scale producer and the big cities, and were where the pack-mule drivers would arrive with their merchandise to rest a while"[25]. The *cafés*, on the other hand, are places where "people can meet to share, talk business, and put the world to rights for hours on end", and where "the *Pasillo*, the *Tango*, and other deep laments of the heart born of love and spite fill the air and share the space". (Zuluaga, 2007, p. 18).

Traditional Festivals. These "summarize and preserve the tradition of rosaries, smiles and sincere welcomes for outsiders, in these catholic towns" (Zuluaga, 2007, p. 18). Amongst the main festivals, some are related directly to coffee: the National Coffee festivals that take place in Calarcá; the *Fiesta del Canasto*, in Filandia; and the *Fiestas de La Cosecha*, in Pereira. Other festivals or fairs that promote traditional music or folklore, and religious fervour or indigenous and Spanish inheritance are the *Carnaval de Riosucio*; the *Fiesta de la Guadua*, in Córdoba; the *Feria de Manizales*, named after the city it is held in; the *Festival del Pasillo*—a Colombian folk dance festival—,in Aguadas; the *Festival de la Bandola*, in Sevilla; the National Duets Competition, in Armenia; the *Concurso Nacional del Bambuco*—a traditional Colombian dance—in Pereira; and the Lights Festivals in Quimbaya and Salamina.

25. http://www.calarca.net/arrieria.html

The food in the region is famous for quantity, preparation methods, colour and aesthetics.



The inns or *fondas*, decorated with traditional regional objects are meeting places for the region's inhabitants.

Handicrafts. The most well-known are those related to coffee, such as the sombrero aguadeño—a traditional hat—and baskets from Filandia; bamboo (known as guadua[26]) objects made in a number of the Quindío municipalities; items made from natural fibre-rope in Aranzazu, and edible products, such as conserves, biscuits, panderos, piononos, corchos (traditional regional cakes), brown sugarloaf and other sugar cane products from all over the region.

Traditional Dress. This is principally represented by the outfits worn by the pack-mule drivers, including the traditional hat, *poncho*, and rawhide shoulder bag, still widely used by many of the coffee growers.

This regional and national love-affair with coffee has also "inspired novelists, composers, poets, story-tellers, painters, photographers, and other artists"[27]. The works include[28]:

Literature. Some of the most important novels are: *La Cosecha* y *El Árbol Turbulento*, by José A. Osorio Lizarazo; *Al pie de la ciudad*, by Manuel Mejía Vallejo; and *Cuando pasa el ánima sola*, by Mario Escobar Velásquez. Outstanding poems include: Coffea Arabica, by Nicolás Bayona Posada; *Romance del Café,* by Guillermo Edmundo Chávez; *Canto al Café*, by Ricardo Arango Franco; El Café, by Ismael Enrique Arciniegas; and Cafeteros, by Salvo Ruiz.

Music. *Bambucos* such as *Cafetal y Campesina chapolera*, by Luis Carlos González, and *Sangre de Café*, by Carlos Botero are all popular pieces that have been influenced by coffee; *Flores de café*, by Ramón Jaramillo; *Mi Cafetal*, by Crescencio Salcedo; and *El Cafetal*, by Gonzalo Vergara are of a genre known as Pasillo; and there are also several classical compositions, one of which is *Sinfonía del Café*, by Fabio González.

26. Guadua: its scientific name is Guadua angustifolia. It is a typical green bamboo from hot and temperate climates in Colombia, reaching heights of up to 25 meters.
27. Chalarca, 1998
28. Based on Chalarca, 1998 y Mejía, 2007

The *Aguadeño* hat is typical of the region and is made in the Aguadas municipality, Caldas.

Coffee culture has inspired poets, sculptors, musicians, writers, paintors and photographers.

Panting. There are well known works of art by Alipio Jaramillo, Gonzalo Ariza, and Eduardo Ramírez Castro, who with the series *Historias del Café*, *Crónica Visual de Caldas* and *Adiós al Café* "has created one of the most outstanding works concerning coffee"[29].

Photography. There are several well-known photographers, including Luis A. Ramos, Félix Tisnés Jaramillo, and José Obando with his photographs of this region in the thirties.

Cinema and T.V. Coffee has even been depicted on the big and small screen with films such as *Bajo el cielo antioqueño*, by Arturo Acevedo Vallarino (1925), and the soap opera *Café con aroma de mujer* presented in 1994, which became a cult show enchanting Colombian and foreign audiences alike with its scenes and regional dialogue from the *Eje Cafetero*.

29. Chalarca, 1998.

Sun-set in the Caicedonia municipality, Valle

The PCC is also distinguished by the contours of its dwellings. Until the XIX century, Colombian architecture was influenced by Spanish-style buildings, especially by those in the south of the peninsula, which, in turn, were influenced by the Arab settlers in Spain. Thus, the Spanish tradition of spatial elements, building materials and techniques determined the style imposed in the PCC during the Antioquian colonization. It is not until the end of the century that, as a result of the peak in the coffee economy, the regional architecture redefines itself, enriching the traditional style with new forms and expressions through the addition of wood carving and fretwork for ornamental and functional purposes.

The early settlers erected temporary dwellings which served to protect them from the rain and cold while they explored and colonized. Their structures were known as *ranchos de vara en tierra*: each was a type of gable roof held up by a Y-shaped structure made of branches, and covered with palm or other leaves. Soon after, they began to partition forests for planting and rearing livestock, and simultaneously they began building houses and towns equipped with services and facilities.

Once the towns were established, the inhabitants were assigned plots around the main square, beginning with the founders. This norm was based on the grid patterns typical of the Laws of the Indies of the XVI century. This layout brought by the settlers, took on a unique quality in the PCC as it had to be adapted to suit the steep mountainous environment. All towns followed a similar pattern: the main square was set as a central point from which the adjoining blocks would be delimited and plots established for important buildings such as the church and Town Hall. After that, plots for the settlers would be allocated[30]. This pattern is repeated in other parts of Latin America, whereby the square and the church were the principal elements and emblems of their development.

30. Téllez, 1980.

Traditional house. Calarcá, Quindío.

The settlers intended to connect this vast landscape through linking pathways, so logically they built their new towns on the mountain ridges where opening paths was easier than in the deep canyons. This made the building of houses more difficult and the available land precious as towns had to be densely grouped together and "hang" down the slopes.

Main church. Trujillo, Valle.

The typical PCC picture began to spread. The undulating high-mountain landscape was slowly adorned with towns built in tapia—or cob—and *bahareque*—plaited cane and mud walls—, with mud roof tiles. These, in turn, were decorated with wood-carving, fretwork and appliqué, and sported in hallways, *patios* and corridors rich with wild scents and embellished with flowers and birds[31].

31. Sarmiento, 1995.

The central *patios*, the corridors, and balconies are an essential part of the traditional dwellings. Municipalities of Apía, Manizales, Santuario and Salamina.

Traditional coffee region houses are full of colour, and are in harmony with their surroundings.

These basic characteristics are repeated in every town, and each one adds its own particular distinction: Salamina is famous for its wood-work; Aguadas, for its hills and the shade cast by roofs that rise and fall, and mix with the omnipresent fog; Marsella has wide roads that surround the park and the grandiose *Casa de la Cultura* made of *bahareque* and cob; Santuario slides along a mountain ridge, widening towards the central plaza surrounded by coloured houses; Filandia's landscape is flatter giving way to an array of two-floored houses; and in El Cairo, the multicoloured painted vertical wood panels on a grand platform shelter the central park which affords a superb view of the *Serranía de Los Paraguas*.

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These observations are confirmed by studies of urban typology that have been carried out in the area[32]. In general terms the urban settlements of the Coffee Growing Cultural Landscape can be grouped into:

1 Settlements with traditional structures which conserve their homogenous architectural qualities such as Salamina;

2 Settlements with traditional structures which also have architectural characteristics which are not completely homogenous, they are poorly developed, such as Neira and Montenegro;

3 Expanding settlements which have modified their original character; their development means that they are centers of regional importance, such as Anserma and Quinchía.

Rural constructions are built with coffee cultivation in mind. Coffee-growers derive most of their income from the coffee harvest. "The house is both the dwelling unit and the center of economic activity[33]"

As regards building techniques, the early constructions were in tapia, an ancestral Asian technique of making earth walls brought to Colombia through Europe. However, its structural rigidity made it not ideal for resisting the frequent and strong seismic movements in the Pacific-Nazca fault line area of influence.

The search for a more suitable material gave rise to the more flexible and dynamic *bahareque*: a series of walls built on a wooden framework with vertical and horizontal beams and slanting braces, covered in *esterilla de guadua*, a layer of bamboo—well known for its resistance and malleability—. This type of wall is less dense than a *tapia*, brick or stone wall and, therefore, lighter, more elastic and more resistant to seismic movements. This style was referred to as the *estilo temblorero*, a type of construction that reflects the singular environmental conditions of the region.

Many structures, particularly secure enclosing walls, and stem walls that helped adapt to the region's slopes, were built in tapia and bahareque mixed together. These false *tapia* walls had the advantage of being thick and robust in appearance, whilst being very light. Generally two-floor houses had a first floor that was made of *tapia* or false *tapia*, and a second floor made in *bahareque*.

32. Fonseca and Saldarriaga, 1984
33. Ibid.

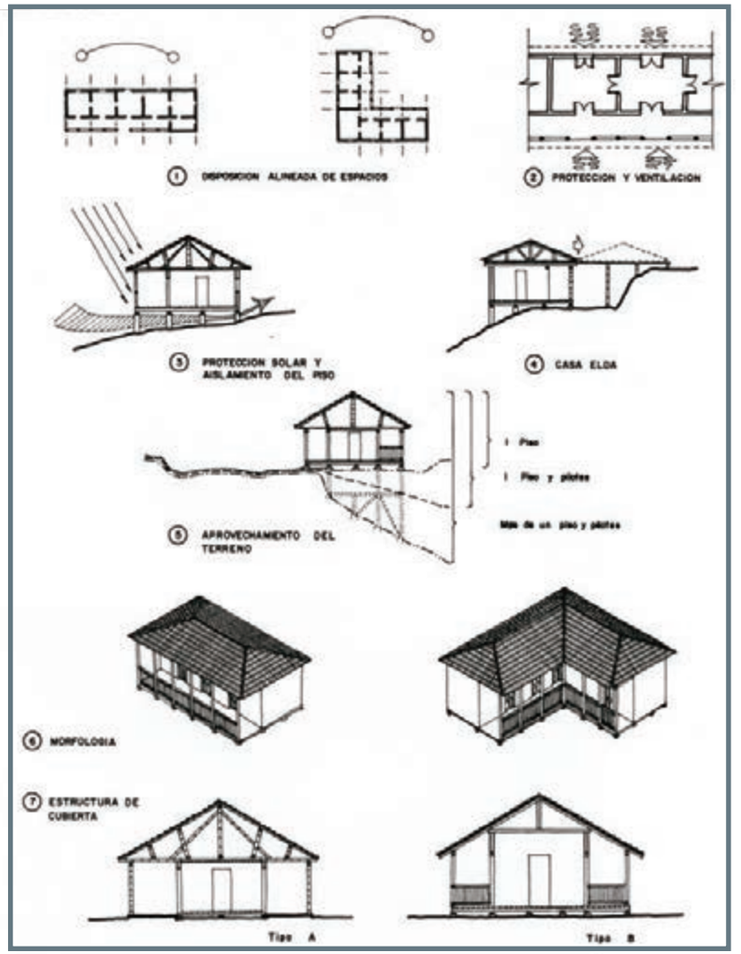
Traditional construction materials are also used to build the installations for the different stages of the *beneficio* process.

These materials were used extensively to construct all types of houses, churches, Town Halls, barracks, *haciendas*, granaries, stables, and, later, all the buildings involved in coffee production process including the coffee mill. Wood from the thick, luscious forests was fundamental for the constructions: tree trunks and sawed wood were used for internal and external structures, and were complemented with the faithful bamboo for horizontal structures such as roofs, ceilings and braces, and vertical ones such as columns.

In the properties studied by Fonseca and Saldarriaga in the Coffee-Growing Cultural Landscape, the hipped and gabled roofs are made from terracotta tiles with bamboo structures. The walls are predominantly constructed in bahareque (51.7%), followed by brick (33.6%) and esterilla de guadua or bamboo (9.1%). The largest percentage of structures in bahareque were found in Caldas (73.1%) with 17.9% made in esterilla de guadua or bamboo The majority of the living buildings are painted on the outside. The study found that buildings used for coffee are generally not painted. In the entire sample, wooden doors and windows predominate. The predominant materials in the dwelling floors are wood (generally for rooms) and cement or tiles for external corridors.

A clear typology of rural housing could be identified; the basic type has central patio and one or two floors. In general, there are big houses of tapia pisada and bahareque, forming parallelepipeds with an open central patio. The roofs are gabeled and made from terracota tiles. They are characterized by a steep slope which causes the typical terraced lookof one-storey buildings with basement-like structures which are called bajos. The patio is the principle characteristic and defining element in this architecture and is usually in “U”, “L”, “I” and “O” shapes.

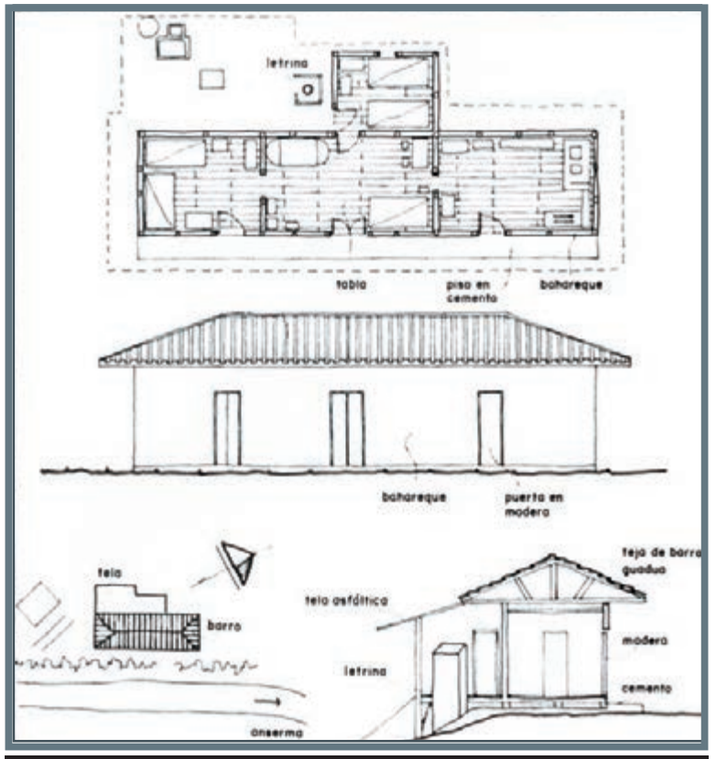
Colourful doors, windows and balconies stand out against the white walls of houses in the PCC. Filandia,Buenavista and Marsella



Elements of a rural dwelling in the coffee region. As published in Fonseca and Saldarriaga (1984).

The *beneficio* and the drying processes sometimes take place in constructions that are part of the living querters.

A corridor of a coffee region's house.



An example of a rural home. Area 47 square meters. Vereda Villa Orozco, Anserma municipality, Caldas. As published in Fonseca and Saldarriaga (1984).

These rural dwellings integrate totally with their surroundings and, as such, allow people to enjoy the landscape from any part of the house. Each spatial layout is shaped like an "I" or an "L", which allows for peripheral corridors around the structure, where the family is able to socialise and appreciate the views of the PCC mountains. Annexed to the houses are the stables, granaries, henhouses, storage rooms, and—most importantly—the *helda*—a kind of sliding cover where the coffee growers can leave the parchment coffee to dry in the sun and protect it from the rain. The bigger coffee farms also have rooms, dining halls and bathrooms for the hired help that comes in for harvests. All the buildings are in traditional style, constructed in *tapia* and *bahareque*, with lots of adorning wooden doors, windows, verandas, stairs, floors, mezzanines, columns, and roofs.

Previous studies, such as that undertaken by Fonseca and Saldarriaga in 1984 into the typology of domestic architecture in the region propose a type of analysis based on " (…) "typological system" made up of features: the axis or the axis of the roof, circulation spaces, size, number and position (…)"[34]. This research classifies the buildings into three groups: "Buildings for living are those which contain spaces for sleeping, kitchen, dining and living. Buildings for coffee are those which contain work spaces: drying, pulping, washing and storage. Buildings for both living and coffee are those which combine, as the name indicates, all the activities in a single architectural unit. The classic example of this last type of building is the casaelda or casa-helba. In the entire sample, buildings for living dominate (63,9%). The next type, buildings for coffee reach 24.3% and mixed buildings are 11.9% of the total." Buildings for coffee predominate in Quindío whereas the mixed type is more common in Caldas and Risaralda.

34. Fonseca and Saldarriaga, 1984

Coffee brought money to the region, allowing the purchase of imported furniture, clothes, dinner services, crystal-ware, pianos, and all sorts of objects for people's needs and their homes. Abodes also became bigger: big enough to house entire extended families together with their servants, and all their amenities brought to the region by European and Colombian merchants lured here by the region's coffee bonanza. They also imported a taste for decorating their abodes with wood-carvings reminiscent of European Art Deco and Art Nouveau that now add to the unique and exceptional attributes of the landscape.

Details of traditional architecture in the region.

Wood-carving is very often used for doors, windows, and balconies.

Churches, hospital and cemetery chapels, and some religious schools are also exceptional examples of the local architecture. The majority of the churches which exist today were built in the last decade of the 19th Century and in the first few of the 20th Century following a European style known as Eclectic Historicism. In the case of religious architecture, there were two major tendencies: that inspired by Classicism present in the churches of Aguadas, Pácora, Salamina and Salento whereas a a Neo-gothic trend is visible in the Cathedral and churches, known as *Inmaculada Concepción* and *Sagrado Corazón*, in Manizales, the church of *San José* in Pereira, as well as the churches in Chinchiná, Santa Rosa de Cabal, Sevilla, Calarcá, Guática and Marsella. Cemeteries are also significant in terms of architectural design; those in Salamina and Marsella (National Monuments) and that of Circasia deserve special mention.

Entryway to the Marsella cemetary in Risaralda department, declared National Heritage

The Uribe Uribe school, in Calarcá - Quindío, is an example of regional architecture.

Chinchiná church, Caldas.

Last but not least, some cultural institutions are housed inside impressive examples of architecture that used to be schools, convents and monasteries, as well as huge mansions belonging to rich and powerful families of the epoch. Some of these include: the Calarcá Cultural Centre; the Cultural Centres of Marsella, Aguadas, Salamina, Salento, El Cairo and Filandia; the headquarters of the Caldas Cultural Department in Manizales, and the Risaralda Department, located in Pereira. The bahareque and bamboo construction of the Risaralda Cultural Centre (Caldas) is worth a special mention, even though it is not of the same period.

Interior and exterior of the Marsella *Casa de la Cultura* - Risaralda, declared a National Monument.

III) Strategic Social Capital Built Around its Institutions

One of the first difficulties encountered by the settlers lied in how to transport their product to external markets from such an isolated area with difficult access to navigable rivers. It was thanks to such necessities that people developed a civic and community spirit to solve collective problems, some of which, such as the pack-mule transportation convoys used for taking coffee from the steep mountain tops, are still used to this day. In time, a new style of Colombian coffee farming dominated by small farms was established—in contrast with the large-scale exploitation in the east of the country—which then became the principal engine for socioeconomic development in the region[35]. Similarly, the community spirit and the social capital that allowed the development of coffee institutions began to take hold.

Coffee production in the PCC is by no means an easy task. The steep slopes of the Colombian Andes, the challenges in terms of mechanization, and the consequently high production costs would surely lead to an uncompetitive activity. The great paradox here is that the region's comparative advantages—its natural attributes—constitute an obstacle in terms of coffee production, especially when compared to other coffee producing regions and countries. Nevertheless, it is the principal rural economic activity in the PCC and, as such, a driving force behind development in the region and beyond. This entire coffee world was created and developed thanks to the institutions set up by the coffee growers. Through collective community action, the institutions helped to forge creativity, research, cooperation and systematic efforts that have rendered the activity competitive and opened a space for Colombian coffee to be positioned as one of the best in the world.

35. Reina, et al, 2007

The coffee institutions are present in different municipalities in order to permanently and opportunely attend to the coffee growers. Municipal Coffee Growers Committee Buenavista, Quindío.

Guaranteeing the purchase of the harvest is one of the most important services provided by the coffee institutions.

Since the 1920's the coffee institutions have been able to effectively generate market access thanks to the development of an integral system of commercialisation, storage, technical assistance, research and development, promotion, and institutional support. They have also articulated coffee growers' interests to the production chain, and forged a strategic social capital for the rural sector with an identity and cohesion that boost their benefits. It is precisely the competitiveness created by these institutions that has given way to price premiums in the commercialisation of Colombian coffee, due payment for the efforts put in by the producers and their families, and the ability to face the challenges posed by the international market.

Scientific research by Cenicafé, has been vital for the sustainability of coffee culture.

The Colombian Coffee Growers Federation (FNC in Spanish, www.federaciondecafeteros.org) is the pivotal point of the institutional network. This private non-profit organisation was created in 1927 with the idea that it would increase the competitiveness of coffee growing and guarantee the wellbeing of the producers. Since 1940, the FNC has been responsible for administering the National Coffee Fund[36]: the principal source of resources for financing the Colombian Coffee Policy. The FNC's skill in management and implementation of plans has been recognised by various regional, national, and international institutions, thus, facilitating fund canalisation to support FNC programmes which boost the coffee growers' savings. Currently, for each Colombian peso invested by the FNC in social development projects, four additional pesos are paid by other institutions (national government, regional authorities, foreign donors, international cooperation agencies, etc.) which benefit the coffee growing communities, including the PCC.

36. The National Coffee Fund is a para-fiscal account sustained by contributions from coffee producers per pound of exported coffee.

Colombian Coffee Growers Federation logo, made up by the members fo the Extension Service and Cenicafé scientists.

The coffee institutions offer the PCC inhabitants a number of services. These include principally programmes aimed at consolidating coffee production, guaranteeing coffee purchases at transparent prices, and exploring new types of added value in the production chain that will bring greater profits for the coffee growers. The Federation represents the interests of coffee growers in international negotiations, provides public goods such as research and promotion of Colombian coffee in global markets, and assists the producers in acquiring complementary services such as technical advice and quality control services. It is also the main institution that manages projects dealing with environmental issues, social infrastructure, and social and economic development to improve quality of life for the producers and their families.

The solidity of the coffee institutions is based on their legitimacy and representation. Its organizational structure is made up of representatives who are elected democratically every four years by 382,000 *cedulado* coffee producers, to direct its policies. The degree of the producers' commitment to the institutions can be measured by their high level of participation in the democratic events. As analyzed in Chapter 4 (State of Conservation), national participation in the coffee elections is of 65%, which is greater even than the level of participation in the national Presidency and Congress elections, and is even higher in the PCC departments. These electoral processes allow important levels of legitimacy and representation in the different decision-making authorities at national, regional, and local levels such as the National Congress of Coffee Growers, the National Committee of Coffee Growers, the Directive Committee, the 15 Departmental Committees of Coffee Growers, and the 354 Municipal Committees of Coffee Growers.

The coffee elections are the source of legitimacy of Coffee Growers Committees.

Municipal Coffee Growers Committee meeting in Armenia, Quindío.

Many of the regional projects are formulated by the Departmental Committees of Coffee Growers, which are responsible for a variety of plans and programmes undertaken in the coffee growing regions. Each of the four departments included in the PCC has a Departmental Committee of Coffee Growers as part of the FNC, in its respective territory. In order to help achieve their aims these Committees are supported by 47 Municipal Committees of Coffee Growers located in the PCC Principal Area (one in each municipality). The Departmental Committees also have one administrative body and several rural extension agents that represent direct institutional presence on farms and in *veredas*. In the four departments that house the PCC there are around 400 agents of the Federation's Extension Service, who are invaluable instruments of communication, allowing the inhabitants to strengthen the strategies and aims of the Landscape Management Plan.

Commercialisation and quality control are supervised by the Coffee Growers' Cooperatives and Almacafé S.A. Coffee Warehouses. The Cooperatives, whose social base is made up of the producers who join voluntarily, have a fundamental role in ensuring fairness and transparency in the domestic coffee market. They do this by guaranteeing coffee purchases from the producers every day of the year at the best possible prices according to international market conditions, through their 600 or so points of purchase all over the country's coffee growing territory, of which 106 are in the Principal Area of the landscape. Almacafé, another supporting institution, is in charge of storing coffee bought from the producers, beginning the threshing process under the required standards for export, and undertaking quality control tests.

The Coffee Growers Cooperatives play a fundamental role in guaranteeing price transparency in the domestic market. Sevilla Coffee Growers Cooperative, Valle.

Another FNC department is Cenicafé, (www.cenicafe.org) the National Coffee Research Centre, which also plays a fundamental role in the conservation of the PCC. Created in 1938, its headquarters are in one of the veredas of the Chinchiná municipality, in the Principal Area. The institution is responsible for generating scientific knowledge and new technologies to benefit the country's coffee growers. So far, it has allowed them to implement a variety of more efficient, productive and sustainable cultivation techniques.

Cenicafé develops new technologies to benefit coffee growers.

The Buencafé Freeze Dried Coffee Plant is located in Chinchiná, Caldas.

The Manuel Mejía Foundation is considered the "the coffee growers university" and is located in Chinchiná, Caldas.

Also in Chinchiná are two more entities linked to the network of coffee institutions: the Manuel Mejía Foundation and the Fábrica Buencafé Liofilizado de Colombia—a freeze-dried coffee factory. The Foundation is responsible for training the Extension Service agents, and coffee growers country-wide. Buencafé—the biggest factory of its kind in the world—produces 100% Colombian instant coffee with previously frozen coffee which allows for improved aroma conservation.

A Montenegro *vereda*—in the Principal Area—houses the National Coffee Park, another entity propelled by the group of institutions. The park has worked tirelessly to promote the cultural aspects of coffee and successfully boost tourism in the region. It is hugely popular amongst visitors to the region, and receives around 500,000 tourists every year.

Thus, one could confidently affirm that the representation, legitimacy and efficiency of the Colombian coffee institutions are unique, not only when compared to other coffee producing countries, but as far as agricultural products as a whole. Their existence is a strategic factor for PCC sustainability and it favours the transmission and fulfilment of the regulations for its management. Economic sustainability is promoted by guaranteeing coffee purchase and price stabilisation; social sustainability, on the other hand, is promoted by means of investments and public goods provisions to improve the communities' quality of life; and environmental sustainability is promoted through encouraging a caring attitude towards the maintenance of natural resources. To sum up, the collective of coffee institutions is an exceptional element of the landscape that grants it the infrastructure, management skills, and alliances between public and private sectors necessary to keep it alive and sustainable economically, socially, and environmentally.

The National Coffee Park dedicates itself to promoting coffee culture.
Montenegro, Quindío.

IV) Combining Tradition and Technology to Guarantee Product Quality and Sustainability

Coffee growing in the PCC has developed as a small-scale production activity, whereby, for the past 150 years, producers have used family-based manual labour to obtain a top-quality product. Over the years they have also had to adapt somewhat in order to deal with the challenges posed by the environment such as increasing production costs, pests and diseases that injure the crops, decreased productivity, and environmental conservation among other elements.

Sunset in the heart of the Eje Cafetero. Pereira, Risaralda.

The Manuel Mejía Foundation trains members of the Extension Service and coffee growers.

The Extension Service is in charge of transferring technology to coffee families.

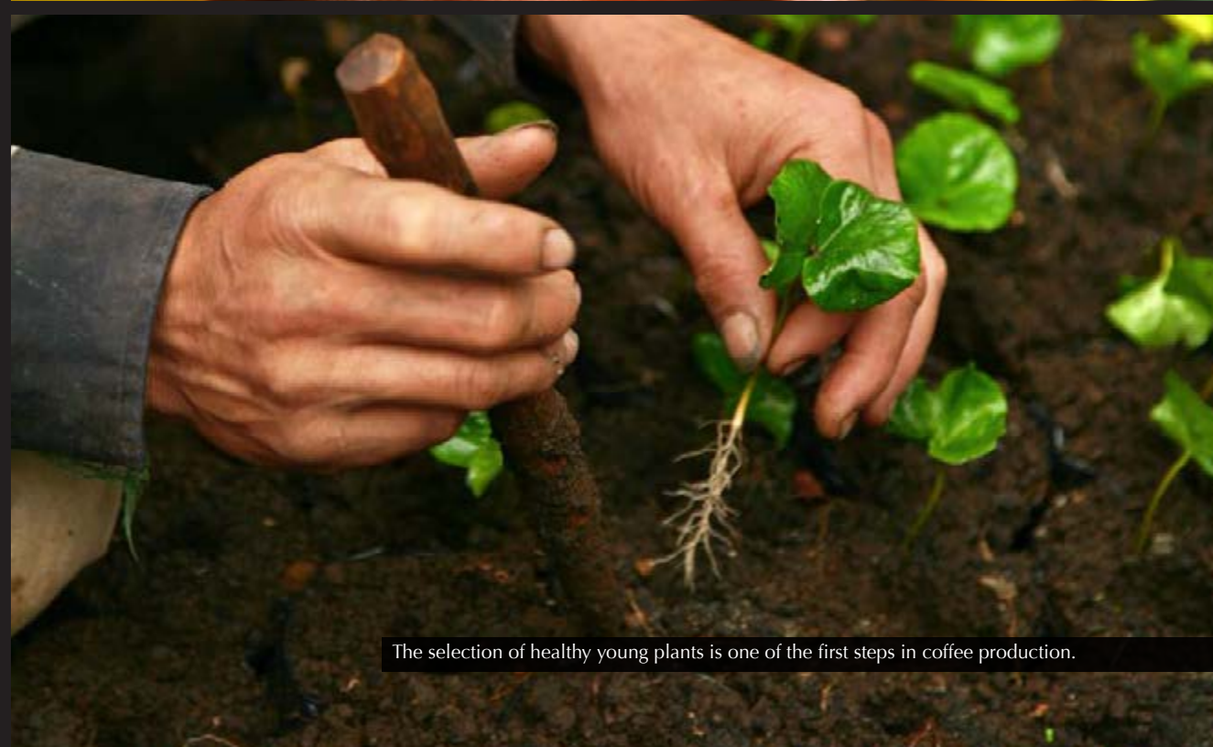
The continuous improvement of cultivation techniques has been possible thanks to the development of a circuit of knowledge transfer surrounding the coffee growers and their productive activity. The circuit is made up of various institutions that have strong presence in the Principal Area of the PCC: Cenicafé (creation of technologies), the Extension Service (technology transfer), and the Manuel Mejía Foundation (providing training for extension agents and coffee growers). Alongside this circuit, the coffee growers have implemented technological innovations that have aided in the sustainability of their activity. Among the most important contributions developed by the coffee institutions are the 18 practices highlighted in Table 1, which tend towards competitiveness and economic, social and environmental sustainability. All of the above is fundamentally aimed at improving quality of life for the coffee growers and their families.

Table 3. Principal Practices recommended by Cenicafé for coffee growing in Colombia

1	Management of coffee plant production cycles	**10**	Rennovation of old Coffee trees
2	Planting Castillo Variety*	**11**	Conservation of the initial tree population
3	Production of young coffee plantys on the farm	**12**	Calibration of aspersion equipment
4	Use of coffee pulp in the development of new coffee plants	**13**	Selective harvesting of ripe berries
5	Optimal plant density according to each productive system	**14**	Ecological coffee wet mill processing
6	Adoption of integrated weed management	**15**	Calibration of coffee wet millequipment
7	Fertilization based on soil analysis	**16**	Adequate coffee drying processes
8	Fertilization applied using *"voleo"* system	**17**	Food production in the plantation
9	Integrated coffee berry borer management	**18**	Use of recording tools and costs analysis

* The Castillo variety has been developed by Cenicafé to replace the so called Colombian variety. The Castillo is the result of many years of investigation into finding a productive seed, of adequate organoleptic characteristics, and rust resistant.

Source: Quindío Departmental Committee of Coffee Growers (2008)



The selection of healthy young plants is one of the first steps in coffee production.

Growing plantains is very common in the region and it is a staple in the diet. Pereira, Risaralda

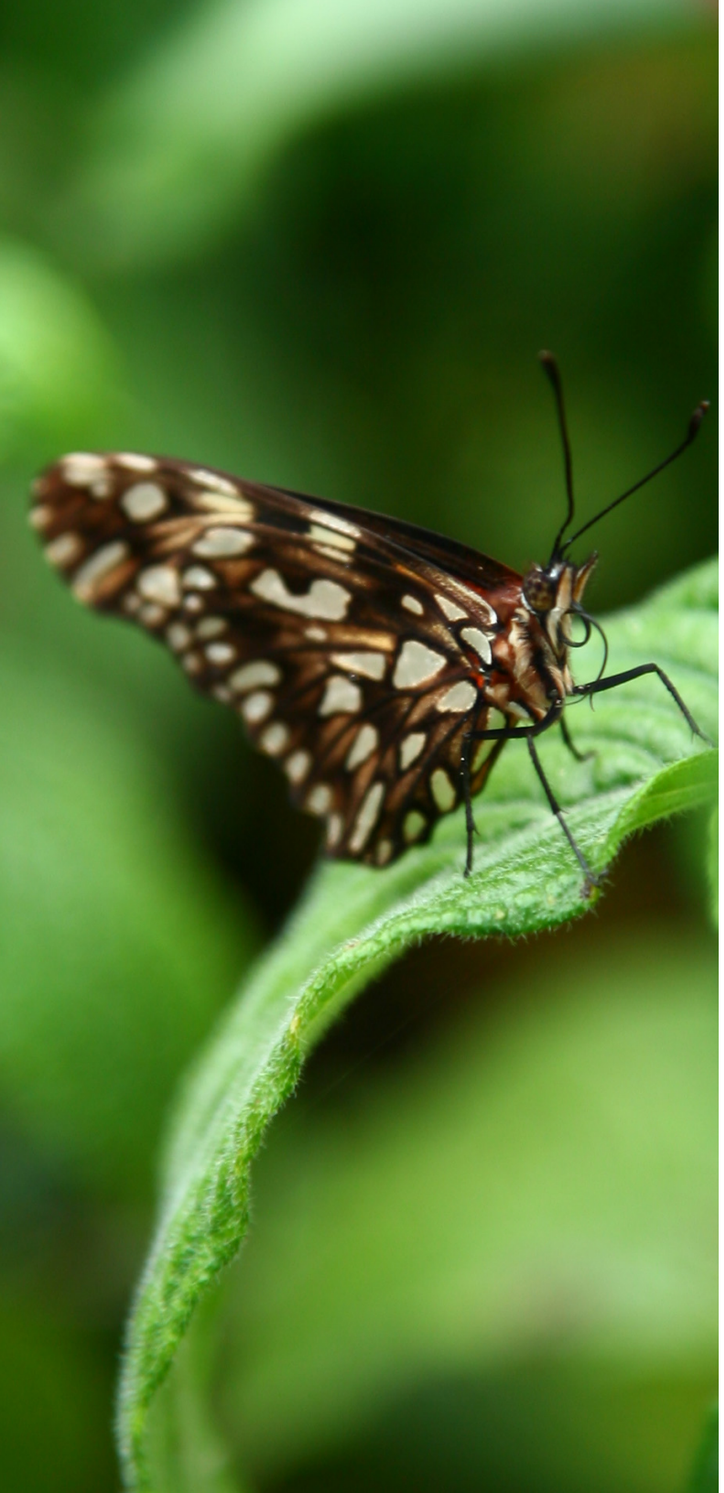
The different degrees of technology adoption, together with the region's varied climatic, topographic and socioeconomic conditions, and assorted ecosystems have led to the emergence of multiple production systems in the region. Thus, in a relatively small area one can find different coffee growing techniques that range from **traditional shade systems**, to **semi-technified** systems with some shade, to **high-tech coffee monocultures**. These layouts established by the coffee growers in the different production systems also include: "fruit trees and forest species, both around the houses and inside the polycultures, so that the trees outside the woods become structural elements of the diversity among the crops in the PCC, which combine and complement the wild diversity represented by the region's forest fragments of different shapes, sizes and states of conservation" (Rodríguez et al, 2008). These layouts: "are illustrative of adaptations to a variety of microenvironments (soils, temperatures, altitudes, slope steepness, fertility, etc.) in a certain socioeconomic context, derived from biological, temporal, spatial, structural, and functional diversity within the plantations, evidencing natural and human effort combined throughout time".

The tree known as guayacán may flower in different colors (yellow, pink or purple) and is an outstanding feature of the region's landscape. Marsella, Risaralda.

The balance between the productive landscape and environmental conservation is fundamental for maintaining the unique characteristics of the PCC, which is part of the **sub-Andean Life Zone** (1,100 - 2,350 masl.), belonging to the tropical section of the Cordillera de los Andes (according to the Holdrige Life Zone Classification Scheme[37]). Due to its "location, relief, climate and soils, this region presents numerous habitats of strategic interest for the conservation of biological diversity" (Rodríguez et al, 2008). Not only is it one of the 34 "hotspots" for the conservation of life on earth—according to Conservation International—but also the richest, most diverse region in the world[38].

37. Rodríguez, et al 2008.
38. Conservation International, undated.

The Cultural Coffee Landscape region, located in the Andes mountains, is considered a strategic area for environmental conservation.



A study by the World Bank and the World Nature Forum on the terrestrial ecoregions of Latin America and the Caribbean, highlighted the region's significance in terms of the natural wealth of global importance present here (Dinerstein et al, 1994, cited in Botero, 1997). The landscape includes three of the ecoregions analysed in the study: I) paramo, II) the Valle del Cauca mountain humid forest, and III) the Valle del Cauca tropical dry forest. The first two were declared of global importance, meaning that there are less than seven ecoregions in the world with this same type of habitat[39].

39. Caldas Departmental Committee of Coffee Growers et al, 2008.

The PCC enjoys a great diversity of flora and fauna.

The partial inventories undertaken in the PCC bring to light the high biodiversity present in the area. The Andean region houses the largest biodiversity and number of endemic plants in the country (310 families, 1,750 genus, and 9,313 species), as well as approximately 6.3% of the birds species in the world (Rangel, 1995, and Andrade, 1992, cited in Rodríguez and Osorio, 2008). For the *Eje Cafetero* ecoregion[40], CARDER (2004) presents the following information on the diversity of species in the region: 837 bird species registered in technical literature, approximately 45% of the bird species in the country; 94 of a possible 268 species of frogs; 25 of a potential 296 species of terrestrial mammals, and 21 of the 175 registered species of bat in the country.

40. Territory made up for environmental planning purposes for 92 municipalities belonging to the Caldas, Quindío, Risaralda, north of Valle and northwest of Tolima departments.

The natural diversity and wealth of the PCC region is of national and international importance, and is protected by Colombian legislation. Despite the absence of inventories referring exclusively to the landscape area, and establishing with precision the protected areas, such as productive forests or forest plantations, these areas play a fundamental role in the conservation of the landscape's unique attributes. In fact, inventories of the flora and fauna, and the definition of the size of the environmental interest areas in the Principal Area are singled out as priority research for follow up studies dealing with the state of conservation of the landscape's natural value. Following are the general attributes of the main national parks in the surrounding area of the PCC[41]:

41. Source: www.parquesnacionales.gov.co

Night falls over the coffee region.

Los Nevados National Natural Park. Less that 30Km^2 away from the PCC Principal Area, this 58,300 hectare natural park spreads over the Caldas, Risaralda, Quindío and Tolima departments. As well as being a key area in terms of the conservation of endemic species and paramo and glacial ecosystems, the park supplies all the principal basins in the region, covering 50% of the hydric needs of the population of the *Eje Cafetero*.

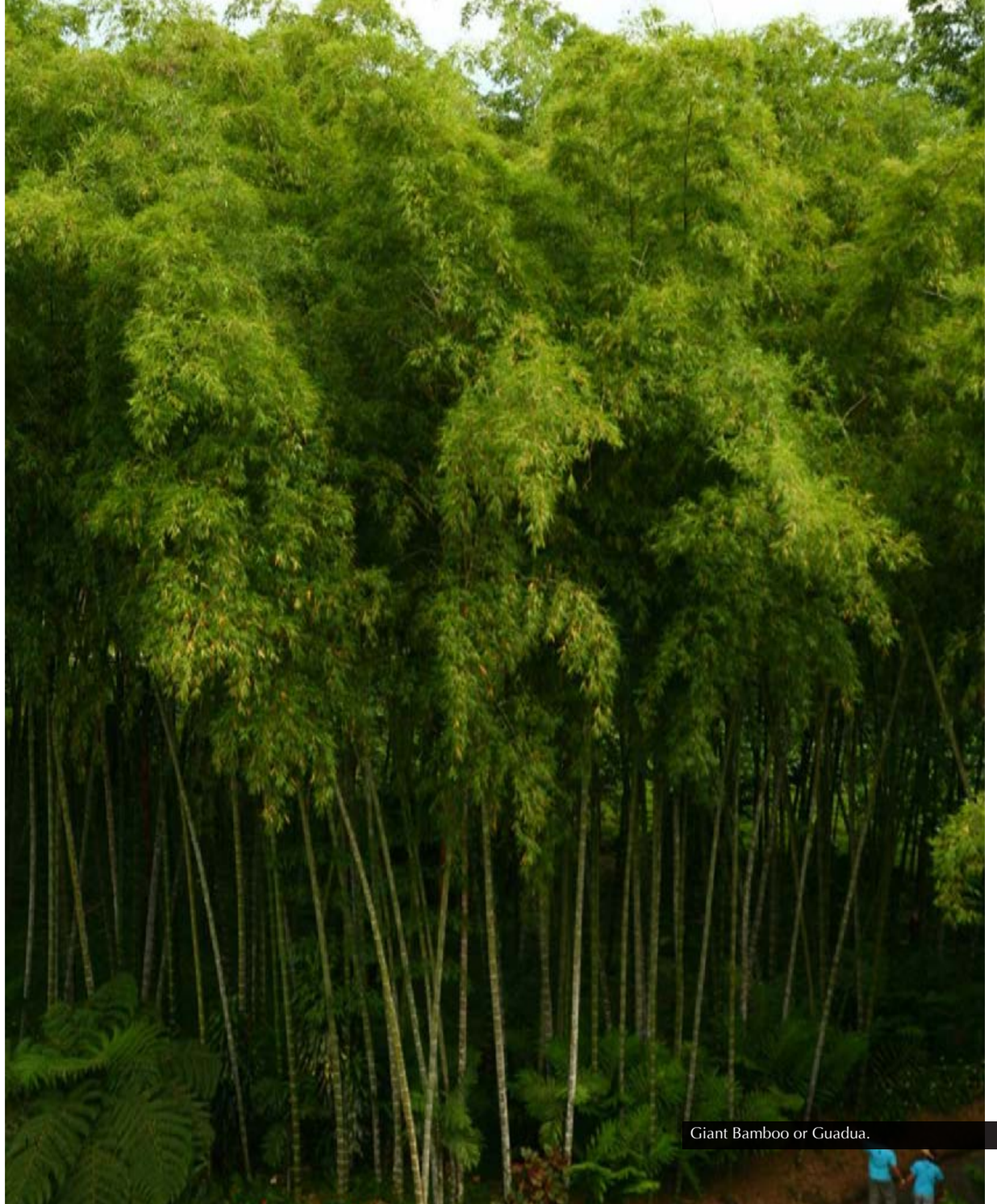
Los Nevados National Natural Park.

Tatamá National Natural Park, seen from Apía, Risaralda

Tatamá National Natural Park. This 51,900 hectare park, spreading over Risaralda, Valle and Chocó contains one of the three paramo ecosystems in Colombia that has not suffered anthropic alteration. The park is in a very good state of conservation and houses a diversity of sociocultural groups such as the *Paisa mestizo* and *campesino* communities, and black and indigenous communities such as the Emberá-Chamí.

Las Hermosas National Natural Park. The park extends over 125,000 hectares and is considered important for its contribution to hydric sustainability, its role in connecting paramo ecosystems with Andean forests, and because it is home to species of global significance such as the Spectacled Bear. Even though the park is not situated within the PCC Principal Area or Buffer Zone, it is of vital importance in terms of its environmental sustainability and conservation of the paramo and cloud forest ecosystems in the *Eje Cafetero* and Valle del Cauca.

The existing biodiversity also depends on the conservation of rivers and streams.



Giant Bamboo or Guadua.

One of the most representative plant species of the region is the Giant Bamboo, known as *Guadua*. Its exact surface coverage is unknown, but it is treasured by the inhabitants as a valuable all-purpose material for building, furniture making, utensils, decorative objects, etc. The plant also lends itself to protecting the environment by safeguarding water sources, controlling erosion, incorporating organic material into the soil, and as habitat for a number of species of flora and fauna[42].

42. Universidad Nacional et al, 2006.

The aforementioned diversity of species and ecosystems are two aspects of the natural wealth of the PCC; another is its abundant sources of water. The PCC is situated mainly in the middle basin of the Cauca River. Seated at between 1,000 and 2,000 masl, the coffee region includes micro-basins that supply aqueducts leading to the *veredas* that cover the whole of the rural zone. The supply sources for the municipal centres, on the other hand, lie at between 2,600 and 4,000 masl, and their aquifer recharge areas are in paramo and sub-paramo locations[43].

43. Caldas Departmental Committee of Coffee Growers et al, 2008.

According to CARDER (2004), the *Eje Cafetero* ecoregion has a huge water supply potential at its disposal: 38 large basins, 111 supplying micro-basins, lakes, lagoons, reservoirs, and underground water sources. Given the significance of this natural wealth, its preservation through environmental service mechanisms such as basin and source conservation, and the implementation of measures to prevent river and stream contamination, is one of the key challenges for the conservation of the landscape. It is also important to highlight that the region enjoys the support of the Regional System of Protected Areas of the *Eje Cafetero*, SIRAP-EC: "made up of the multiple local and regional conservation and management initiatives led by Autonomous Corporations, public and private organisations (including the Departmental Committees of Coffee Growers), and private owners. These areas represent 23% of the territory, which may be considered a strategic component of regional sustainable development" (SIRAP-EC, 2005).

The coffee institutions have contributed significantly to the conservation of water sources and other natural resources in the PCC. These include campaigns and programmes for the integrated management of water sources, and the use of environmentally friendly technology, among others. For example, the Cenicafé project: Initiative for the Study of the Coffee Genome, the Coffee Berry Borer, and the Beauveria Bassiana Fungus is aimed at enhancing the competitiveness and sustainability of coffee growing through obtaining improved varieties that are resistant to the principal phytosanitary problems and can be harvested in a more uniform fashion. This, in turn, will reduce the use of chemicals, and, thus, contribute to the conservation of the landscape.

The coffee growers are committed to protecting their water sources.

Sunrise on the Cauca River Cauca, the second most important in the country.

V) Evidence of a Pre-Columbian Past and Early Domestication of Plants in America[44]

The geographical area of the PCC has undergone an extensive history of human occupation previous to the Antioquian colonization. The special conditions for agriculture, which are recognised today as the climate and soil, have meant that for over 4,000 years the region has been an experimentation centre for the domestication of plants. The earliest settlers who arrived towards the end of the Pleistocene period (about 10,000 years ago), began to alternate the traditional hunting and harvesting with agriculture. There is evidence of this in the numerous seasonal settlements where archaeologists have found stone hunting implements, but also farming tools including axes for felling, hoes for turning over the earth, and polished stone pestle and mortars that are often found containing traces of starch from the plants they cultivated and ground. Apparently, these crops spread from here to other regions.

Representative piece of the Quimbaya culture.

44. Text by staff at the Colombian Institute of Anthropology and History - ICANH.

The Quimbayas left important samples of pottery.

Between 3,000 and 2,000 years ago, many different sociocultural changes took place in the region. For example, there was a demographic increase, higher levels of interference in the environment due to the expansion of farming and the increasing number of settlements, and the adoption of pottery as a technology and knowledge that was strongly linked to domestic and ceremonial activities. This dynamic gave way to the formation of hierarchical political units that densely populated the region during the first millennium of the Christian era. Their vestiges can still be found in the numerous artificial terraces on the mountain slopes. Also from this era is a significant part of gold and ceramic pieces, finely elaborated and known under the stamp of the Classic Quimbaya style, which were part of the funerary trousseaus of important political and religious individuals.

Around the year 700 of the Christian era—within the context of a growing population and increasing political hierarchy in its social organisations—there was a rapid sociocultural change that, among other elements, brought about a drastic transformation in burial customs, iconography, pottery and metallurgic techniques. The transformations resulted in the formation of numerous chieftainships which later faced the European invasion in the XVI century. The wars and different domination strategies led to political and territorial destructuralisation of the social groups, including the Quimbayas, Quindos, Irras, Ansermas, Pozos, Paucuras, Carrapas and Armas, who were, in fact, almost entirely annihilated at the hands of the Spanish. The survivors, together with other subordinate groups—descendants of African slaves, who came to exploit the region's gold mines—began to form new communities, settlements and territories dependant on the Spanish rule and controlled from the new towns or frontier territories.

The PCC, as we know it today, is a fusion of cultural elements and archaeological relics from the Pre-Columbian period, traces left behind in the rural and urban architecture of the Colonial period, and heritage left by the Antioquian settlers that reflects the plurality of the historical processes that have gone into shaping the landscape.

Palestina Caldas, rescue and monitoring proyect.

As regards archaeology, the region houses important evidence that can serve to increase knowledge about the country's Pre-Columbian and colonial past; thus, constituting a fundamental part of Colombia's archaeological heritage. Despite the systematic plundering of Pre-Columbian tombs during the Antioquian colonization—which in the beginning made the region famous for its archaeological wealth—,today investigation projects and prevention measures taken against the destruction of archaeological heritage are of paramount importance in protecting and appreciating these attributes.

Pre-Columbian cultures were outstanding goldsmiths who often used feminine figures such as pumpkins and totumos to symbolise fertility.

There are currently several archaeological investigation groups working in the region, the most important being the Universidad de Caldas Museums Centre, the Universidad Tecnológica de Pereira Laboratory of Historical Ecology and Cultural Heritage, and the Quindío and Valle universities leading the scientific studies of the rich archaeological heritage of the PCC. These entities emphasize studies in areas that are under the threat of destruction due to infrastructure macroprojects, and are supported by the State's regulations for the protection of archaeological heritage. This has favoured the regional archaeology and as a result of these projects much first hand information has been discovered about the region's pre-Hispanic past. Preventative measures for the protection of archaeological heritage are also beginning to be introduced in territorial planning schemes.

Museums in the region display part of the archaeological pieces from grave plundering and information gathered thanks to recent scientific research. In their commitment to recuperate archaeological heritage, some of the following entities have made inventories of the collections and put forward projects to have these collections registered with the Colombian Institute of Anthropology and History in compliance with Colombia's Law of Culture. Following are some of the most important collections that exist in the PCC municipalities:

Mid Cauca prehispanic sttlers exhibition museum centers.

- The Archaeological Collection of the Universidad de Caldas Museums Centre—previously known as the Anthropologic Museum—which has housed one of the most important and representative samples of objects from the Quimbaya region, since 1945. The collection is made up of over 4,000 ceramic and lithic pieces, some gold objects (*Tumbaga*), and some bone remains. The pieces are outstanding examples of technique and style and the collection is testimony of the works of several pre-Hispanic groups that inhabited the region.

- The Gold Museum, belonging to the Banco de la República, which—through the Quimbaya Museum in Armenia and the Cultural Zone in Manizales—exhibits numerous gold and ceramic pieces "that demonstrate the technical complexity, and the aesthetic and symbological quality of the objects produced by the region's ancestral dwellers" (López et al, 2008).

- The Universidad del Quindío has an important archaeological collection that stands out in terms of the quality and beauty of the ceramic pieces.

- The pieces housed in the Eliseo Bolívar Museum in Belén de Umbría, are registered with the Colombian Institute of Anthropology and History- ICANH.

Quimbaya goldsmithing is recognised by the use of tumbaga, an alloy of gold and copper which gives a pinkish, shiny appearance.

- Dr. Marino Alzate Ospina's collection donated to the Aranzazu Town Hall.
- The Cultural Centre in Salamina has an impressive collection of ceramics, particularly engraved brown funeral urns associated to the earlier formative periods in the region.
- In Belalcázar, the first floor of the *Cristo Rey* monument contains an archaeological collection, whereas the Cultural Centre has a variety of lithic pieces.
- The *Museo Nacional del Sombrero*, in Aguadas, has an Indigenous Hall containing ethnographic pieces.
- The collection available in the Muisca Hall of the Filadelfia Cultural Centre.
- The collection in the Museum of Arts and Traditions in Riosucio.
- Other collections housed in the cultural centres in Apía, Balboa, La Celia, Marsella, Palestina, Quinchía, Salamina and Santuario.

Table 4 presents the number of objects in some of the aforementioned collections:

Table 4. Inventories of archaeological objects in available collections – PCC Principal Area

Municipality	Number of objects	Inventory and record
Aguadas	35	Yes
Apía	70	Partial
Aranzazu	465	Yes
Balboa	300	No
Belalcázar	42	Yes
Belén de Umbría	700	Yes
Filadelfia	129	Yes
La Celia	100	No
Marsella	120	No*
Manizales	5,214	Yes**
Palestina	95	Yes
Quinchía	44	No
Riosucio	215	Yes
Salamina	166	Yes
Santuario	120	Partial
* There is an inventory, but not in the format required by ICANH		
** In formats required by the National Museums Network.		

Source: López et al, 2008; MORENO MORENO MARIA CRISTINA, Universidad de Caldas Museums Centre (2007, 2009). MORENO MORENO MARIA CRISTINA PROYECTO "CALDAS COMO UNA PROPUESTA MUSEOGRAFICA - EL MUSEO COMO TERRITORIO" 2008

Mid Cauca prehispanic sttlers exhibition museum centers.

Palestina Caldas, rescue and monitoring proyect.

Table 5 presents the locations in the municipalities in the Principal Area of the Landscape where vestiges have been recovered and for which absolute dating exists.

Table 5. Archaeological Sites with Absolute Dating –PCC Principal Area

Municipality	Site
Aguadas	Yacimiento Torre 241
	Yacimiento Torre 244
Armenia	City Gate
	Octava Brigada
Calarcá	FE 2001 Llanitos de Guaralá
	Finca La Cecilia
Chinchiná	Yacimiento 10
	Yacimiento 15 Campoalegre
	Yacimiento 9
Córdoba	C -L-Si -1
Filandia	La Soledad
La Merced	Yacimiento 035
	Yacimiento 039
Marsella	La Selva
Montenegro	Batallón Cisneros, Sitio 18
	FE 2032 Ciudadela Compartir
	Yacimiento Chapinero
Neira	Yacimiento 044

Municipality	Site
Pereira	66PER001
	66PER002
	66PER005
	66PER007
	66PER012 Nuestra Señora de la Pobreza
	66PER089 Salado Consotá
	Génova Sitio 19
	Génova Sitio 20
	Génova Sitio 25
	La Germania Y8
	Llanogrande, Terraza 1
Salento	Salento 21
	Salento 24
Santa Rosa de Cabal	Cantarrana
	El Antojo
	El Jazmín
	Finca El Tauro
	PK 2 + 706
	Yacimiento 11 Guayabito
	Yacimiento San Germán
Santuario	Villa Elisa
Villamaría	Los Arrayanes
	Nuevo Río Claro
	Sitio Lagunabaja

Source: Based on Briceño (2008).

Partitioned tomb discovered in Calarcá, but now located in Armenia, Quindío. appreciate the region's archaeological past.

VI) Four Departments that Synthesize the Wealth of a Productive Landscape

The PCC Principal Area includes 411 rural veredas and 14 urban areas in the Caldas, Quindío, Risaralda and Valle departments. These areas in the central-west region of Colombia share a deeply-rooted coffee culture tradition, bringing together the most integral manifestation of the essence of the landscape, which synthesizes into four attributes that define its universal exceptionality: I) human, family, generational, and historical effort put into the production of a top quality coffee; II) coffee culture for the world; III) strategic social capital built around the institutions; and IV) combining tradition and technology to guarantee product quality and sustainability.

Panoramic view of the Andes Cordillera seen from the municipalities of Pácora and Salamina.

Coffee farm in the Ansermanuevo municipality, Valle.

Coffee is an esential part of the activities that take place in the municipalities of the region. Salamina, Caldas.

The Colombian coffee region includes areas belonging to 20 departments all over the country. Nevertheless the PCC *veredas* and urban centres were selected for their representation of the aforementioned attributes. As we saw in Chapter 1 (Identification), the selection was made through the application of a cartographic demarcation model which allowed for the identification of the most distinctive areas based on a series of previously agreed upon attributes. In order to have a more complete vision of the totality of the landscape's facets, following is a deeper study of the characteristics of each productive area according to the studies prepared by the Regional Technical Teams.

Caldas[45]

Each year Caldas produces 1'400,000 60kg bags of export-quality coffee, at altitudes that range from 1,200 to 2,000 metres above sea level, under optimal climate and soil conditions for coffee production. The average altitude of the veredas in this part of the landscape is approximately 1,560 masl, with 70% of the hectares located at altitudes that are optimal for high mountain coffee production (between 1,400 and 1,800 masl); 28.4% is situated at a lower range (between 1,000 and 1,400 masl), and a little over 1% in higher areas (over 1,800 masl).

The department is renowned for its significant dependence on coffee production. It houses approximately 38,000 coffee growers, 85,000 hectares of coffee plantations, and 50,000 coffee farms, of which just over 11,100 are in the PCC Principal Area and around 9,100 in the Buffer Zone. In economic terms, coffee growing accounts for 69% of the GDP from agriculture of this department and 8% of the total production in the department[46].

45. This section is an abstract of the final report presented by the Caldas Technical team, "*Estrategias para valorar e institucionalizar el Paisaje Cultural Cafetero del Eje Cafetero de Colombia. Ejecución Departamento de Caldas*".
46. Authors calculations based on "*Cuentas Departamentales del DANE, año 2006*" (at constant 2000 prices). www.dane.gov.co

The predominance of small productive units or plots of land is another of the Landscape's characteristics. This property structure is due to both the Antioquian colonization, and the progressive division of property. The average size of the PCC coffee farms in Caldas are of a mere 3.6 hectares, highlighting the significant land division in the region.

About 48% of the rural area of the Landscape in Caldas is planted with coffee trees. The remaining 52% is shared by other products such as plantain, panela cane, fruit, vegetables, sugar cane, beans, and corn. The farms also have pastureland for rearing livestock and forests, and engage in pisciculture and pig rearing. This medium-scale complementary production is based on a *campesino* rationale: coffee is a permanent crop, so the producers need to have transitory alternate activities that are easy to trade, and allow them an additional income or complement their own diets.

Landscapes and people of Chinchiná, Caldas

The coffee produced in Caldas is grown on slopes. The rural area has average slope gradients of 48%. Eighty-four percent of the area has inclinations of between 25% and 75%; in 13,5% of the area the slope gradients do not exceed 25%, and in 2% of the area the gradient reaches 75% and over. The steepest slopes in the PCC are in Filadelfia, Aranzazu and Salamina (average 60%), and the most moderate are in Palestina and Chinchiná (between 26% and 29%). Coffee growing on slopes has impeded mechanization and obliged producers to introduce appropriate soil conservation techniques to prevent the risk of soil erosion.

One of the main aspects that reflect the producers' crop management is the continuous planting of young coffee trees that, among other factors, determines the productivity and competitiveness of the crops. Caldas is one of the most successful regions in the country in terms of coffee production, and this is due to this renovation of coffee plantations (a flag programme instilled by the coffee institutions) which is undertaken by the coffee growers on a yearly basis; guaranteeing the maintenance of a technified and low age profile in the coffee plantations, which is a fundamental component for major productivity on the farm. Data from the Coffee Information System, SICA, reveal that the average age of the coffee trees in the Caldas area of the PCC Principal Area is of 5.9 years. Fifty-seven point four percent of this area is planted with coffee trees averagely aged between 5 and 9, while 42.5% has an average age of between 2 and 5 years. Chinchiná and Palestina have the youngest trees. The high technification of crops, reflected in the adequate ages of the coffee trees, the high density plantations, and adoption of disease-resistant varieties, has allowed the department to position itself as one of the principal producers in the country, contributing 11.1% of the total coffee harvests from the entire country.

Caldas is one of the departments with the highest coffee production in the country.

The areas that make up the PCC enjoy great natural wealth.

The Caldas department and, in particular, the municipalities included in the PCC area of influence embody enormous natural wealth. Some of the competitive advantages are as follows[47]:

- The diversity of climates and altitudinal floors that favour biological biodiversity and scientific tourism.
- The area's variety of scenic landscapes and water supply make the future development of ecotourism possible.
- The presence of a natural laboratory (the Chinchiná River basin) for evaluating the threat of volcanic eruption, the exploitation of geothermic energy, and the development of scientific knowledge about erosion control.

In addition to the above advantages, the PCC area of influence has the following environmental strengths[48]:

- The presence of significant relict forest areas in the Central Forest Reserve, in the axis of the *Cordillera Central* in parts of the Manizales, Marulanda, Aranzazu, Neira, Salamina, Aguadas, Pácora and Pensilvania municipalities (most of which are in the PCC area of influence).
- The existence of land acquisition programmes and policies for restoration of the biodiversity.
- The availability of personnel skilled in topics related to biodiversity and ecotourism.
- The presence and commitment of the Caldas Committee of Coffee Growers.
- High biodiversity areas.
- The willingness of local governments and individuals to recuperate areas through reforestation.

47. Corpocaldas, 2007.
48. Ibíd.

Biodiversity in Caldas is represented by a considerable number of species of flora and fauna. 857 vertebrates, 124 mammal species, 433 bird species, 97 fish species, and 115 herpetofauna (reptiles and amphibians) species have been identified in the ecosystems explored so far[49]. 170 bird species (in 46 hectares), that represent 10% of the total number of birds species known in the country, have been recorded in the heart of the coffee region (near Cenicafé, in the Chinchiná municipality)[50]. As regards flora, 5,000 species of phanerogams have been reported in the inventoried departmental territory, which is equivalent to 20% of the total area[51]. In Manizales, an unfinished inventory of vascular plants has so far recorded 813 species[52].

49. Ibíd.
50. Botero & Baker, 2001.
51. Corpocaldas, 2007.
52. Botero, 2005.

The Caldas department houses a great variety of birds, mammals and reptiles.

Areas of ecological interest in the department include the natural forests and the protected areas. The former extend over approximately 40,000 hectares and are found particularly in the axis of the *Cordillera Central* and *Cordillera Occidental* and in isolated areas in the east and west of the department. There are also around 18,500 hectares of productive forests or forest plantations. As already mentioned *guadua*, one of the most representative species in the region, enjoys natural surface cover of around 4,000 hectares, whereas guadua plantations equal to about 400 hectares[53]. Some of the most important protected areas in the department are the Los Nevados National Natural Park (in Villamaría), and some Forest Reserves situated in the area of influence of the Landscape. The management plans of these areas guarantee their permanence through time[54].

53.Corpocaldas, 2007.
54. Ibíd.

Selective harvesting is a key element that contributes to the quality of coffee.

The department is also of national importance because of its abundance of water supplies. There are two large hydrographic basins of which one, the River Cauca catchment area or basin is situated in the PCC area of influence. Six river basins can be defined within the River Cauca catchment area at a regional scale (1:100,000): I) Campoalegre and San Francisco Rivers; II) Risaralda River; III) Chinchiná Rivers; IV) direct tributaries coming into the Cauca from the East; V) direct tributaries coming into the Cauca from the west; and VI) the River Arma. At an intermediate scale (1:25,000), the Cauca catchment area can be divided into nine basins: I) Chinchiná River Basin; II) Pozo River Basin – Maibá; III) Risaralda River Basin; IV) Arma River Basin; V) Tapias River Basin – Tareas; VI) Supía River Basin; VII) direct tributaries into the River Cauca; VIII) Pácora River Basin; and XI) Campo Alegre Basin– San Francisco[55].

This exceptional environmental wealth has allowed the department to begin consolidating a market for speciality coffees of exceptional quality, consistent in its physical and sensorial properties. In this relatively new market, the producers capitalize the excellent reputation of coffee from this area in order to improve their income.

The starting point for analyzing the architectural features of the landscape in this zone was the research undertaken by Fonseca and Saldarriaga in 1984, which was based on a rapid sample of 510 dwellings with 600 buildings and a detailed sample of 46 dwellings with 52 buildings[56]. The predominant individual type consists of a single axis with one and two corridors. The following type is that of two axes at a right angle; within this group, dwellings with two corridors predominate.

55. Ibíd.
56. Fonseca and Saldarriaga, 1984

Panoramic view of a section of the National Coffee Park in Montenegro, Quindío.

Quindío[57]

Filandia, in Quindío, is one of the most traditional coffee municipalities.

The Quindío department—with its surface area of 1,845 km^2—is the smallest continental territory in the country. It stands out nationally for its deeply-rooted coffee tradition and its natural wealth represented by exuberant vegetation and great diversity of ecosystems.

Coffee is produced in Quindío's 12 municipalities and 207 of its 267 veredas. The department is the eighth largest coffee producer in the country (out of a total of 20), with an estimated annual production of 666,000 60kg sacks of green coffee or, in other words, 6% of the total Colombian harvest. This activity is of key importance for the department's rural economy, contributing 34% of the agricultural GDP.

57. This section is based on the final report of Quindío's Technical team, "*Delimitación y caracterización Proyecto Paisaje Cultural Cafetero en el departamento del Quindío*".

Replica of a traditional coffee region house. National Coffee Park.

Quindío houses approximately 6,600 coffee growers, 42,400 hectares of coffee plantations, and 7,900 coffee farms, of which 5,900 are situated in the PCC area of influence[58]. Of these, around 3,650 are situated in the Principal Area, constituting an extension of coffee plantations nearing 11,200 hectares, or 39% of the PCC rural area in the department. The remaining area is shared with other agricultural products such as plantain, cassava, sorghum, soya, bean, corn, and cocoa, and livestock rearing (cattle, pigs, goats, and sheep) which occupies a prominent position in the regional economy.

58. Principal and Buffer Zones.

Plantain trees are one of the most representative crops in Quindío.

Coffee growers from Quindío are also committed to producing high quality coffee.

Buenavista coffee area, Quindío.

As is the case in the rest of the PCC, Quindío is also important for combining traditional manual cultivation with the introduction of innovative production techniques that have increased competitiveness; in fact, just over 74% of its coffee growing area uses modern production techniques. The plantations are organised in a dense orderly layout, which leads to an additional capacity of production, on average more than 11 loads[59] of dry parchment coffee per hectare annually. The remaining 26% is planted under what is known as the traditional production system, which lacks planting patterns, is less dense (less than 2,000 trees per hectare), has older trees (more than 12 years old), and uses tall coffee plant varieties. This system allows for an average productivity of less than 4 loads of dry parchment coffee per hectare : too little to cover the producer's basic needs.

59. One load is equal to 125 kilos.

El Balso *vereda*, Buenavista - Quindío.

Adequate crop management by the PCC producers is also reflected in the low age profile of coffee plantations. As a result of the widely used practice of renewal, the average age of the trees in the technified plantations is of 4.9 years, with an average density of 6,355 trees per hectare. The continuous renewal of the coffee plantations allows the continual recomposition of the Landscape and guarantees the competitiveness and continuity of this agricultural activity.

Quindío houses a variety of birds and Heliconias.

As for flora and fauna, the region houses a great variety that includes indigenous plant species, orchids, and a great diversity of Heliconias and Lobster Claws, 380 bird species including Eagles, Hawks, Caracaras, Toucans, Andean Guan, Burrowing Parrots, Yellow-eared Parrots, and Woodpeckers, among others. There are also several mammal species including the almost extinct spectacled bear, the Howler Monkey, the Sloth Bear, the Kinkajou, the Black Agouti, the Mountain Tapir, the Snowshoe hare, the Philander Opossum, and squirrels among others[60].

60. Quindío Provincial Government (2008).

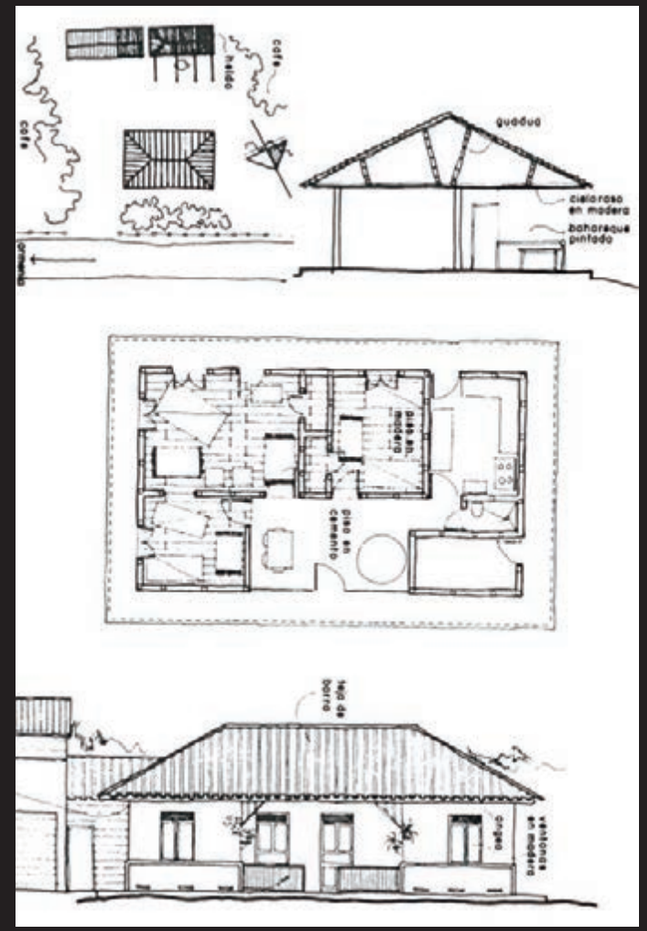
Much of this natural wealth and diversity is housed in the protected areas. According to a recent study by the Quindío Regional Autonomous Corporation (CRQ et al, 2006), the department has a total 27,456 protected hectares, which are part of the Quindío Department System of Protected Areas SIDAP that aims to "articulate the social and institutional actors, and the areas and policies that deal with the management and conservation of natural spaces in order to fortify preservation and sustainable use of the biological diversity in the Quindío department". If one considers the total area of the department (196,183 hectares), this implies that around 14% of the territory is under some kind of protection.

Acording to studies undertaken by the Quindío Regional Autonomous Corporation, the department houses 27,456 hectares of protected areas.

Quindío has a large number of water sources.

It is important to highlight the hydric resources of the Landscape. The PCC Principal Area in Quindío is situated in the middle basin of the Cauca River, which provides priority ecological units for the retention and regulation of water supplies. These include the central and Western Cordillera paramo and sub-paramo systems, and the high river basins of the Quindío, Santo Domingo, Navarco, Otún, Consota, Barbas, Chinchiná and La Vieja Rivers. Water supplies are among the main determinants as regards the distribution of coffee harvests, and constitute a fundamental element for the wet-milling process, one of the key characteristics of Colombian coffee.

Last but not least, it should be mentioned that Fonseca and Saldarriagas' research into architectural features in this zone also illustrate the specificities of the area. Their data was obtained from 598 dwellings with 801 buildings. The detailed sample consisted of 78 dwellings with 88 buildings in which single axis buildings with just one corridor predominated[61]. The remaining buildings were distributed, almost in the same proportion, between those with two axes at right angles and those formed by two buildings.



An example of a rural home. Area 84 square meters. Vereda Platanillo, Armenia municipality, Qundío. As published in Fonseca and Saldarriaga (1984).

61. Fonseca and Saldarriaga, 1984

Risaralda

The Risaralda department extends over 3,592 Km2, which is equal to 0.3% of the total area of the country. It is divided into 14 municipalities, of which 10 are situated in the PCC Principal Area, with more landscape presence in the municipalities of Belén de Umbría, Marsella, Apía, Marsella, Santuario and Santa Rosa de Cabal. The Buffer Zone houses 12 municipalities.

Panoramic view of Santuario, Risaralda.

The department produces approximately 815,000 60kg sacks of green coffee per year, which makes it is the sixth largest coffee producer in the country. It has 54,400 hectares of coffee plantations at altitudes that range from 1,000 to 2,000 masl. There are approximately 20,000 coffee growers and 25,900 coffee farms in Risaralda, of which 12,974 are in the PCC area of influence. Of these, almost 6,300 are situated in the Principal Area, extending over 18,950 hectares of coffee plantations. Coffee growing is the region's main agricultural activity, accounting for 49% of the departmental Agricultural Domestic Product. This is complemented with other crops such as sugar cane, plantain, cassava, corn and fruit, and livestock rearing for milk and meat production.

Coffee zone in the Marsella municipality, Risaralda.

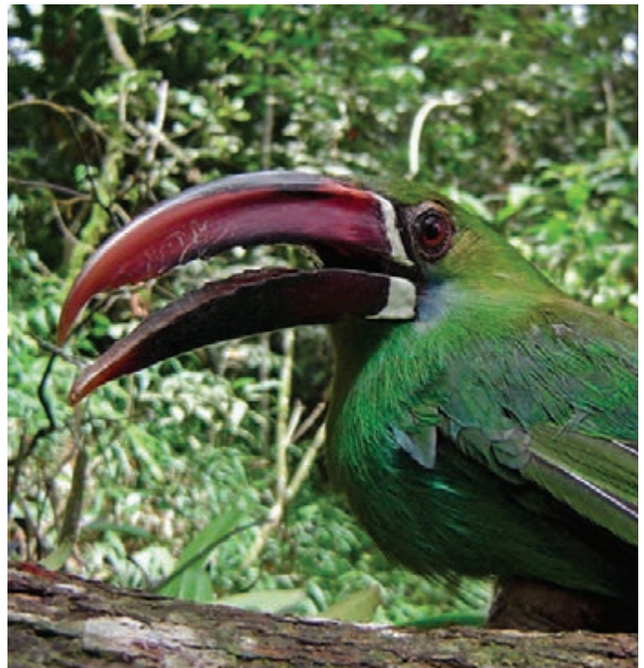
The PCC Principal Area in Risaralda extends over 32,537 hectares. Coffee growing is highly technified with a participation of 56% of the total rural area. Within this production system there are a variety of agroforestry layouts ranging from shade systems, part-shade systems, to full-sun ones. There are also a number of traditional production systems that are limited in their adoption of more modern techniques of crop competitiveness improvement.

The human effort put into producing top quality coffee in the areas that make up the PCC.

Risarlda is rich in water sources as it belongs to the middle basing of the river Cauca

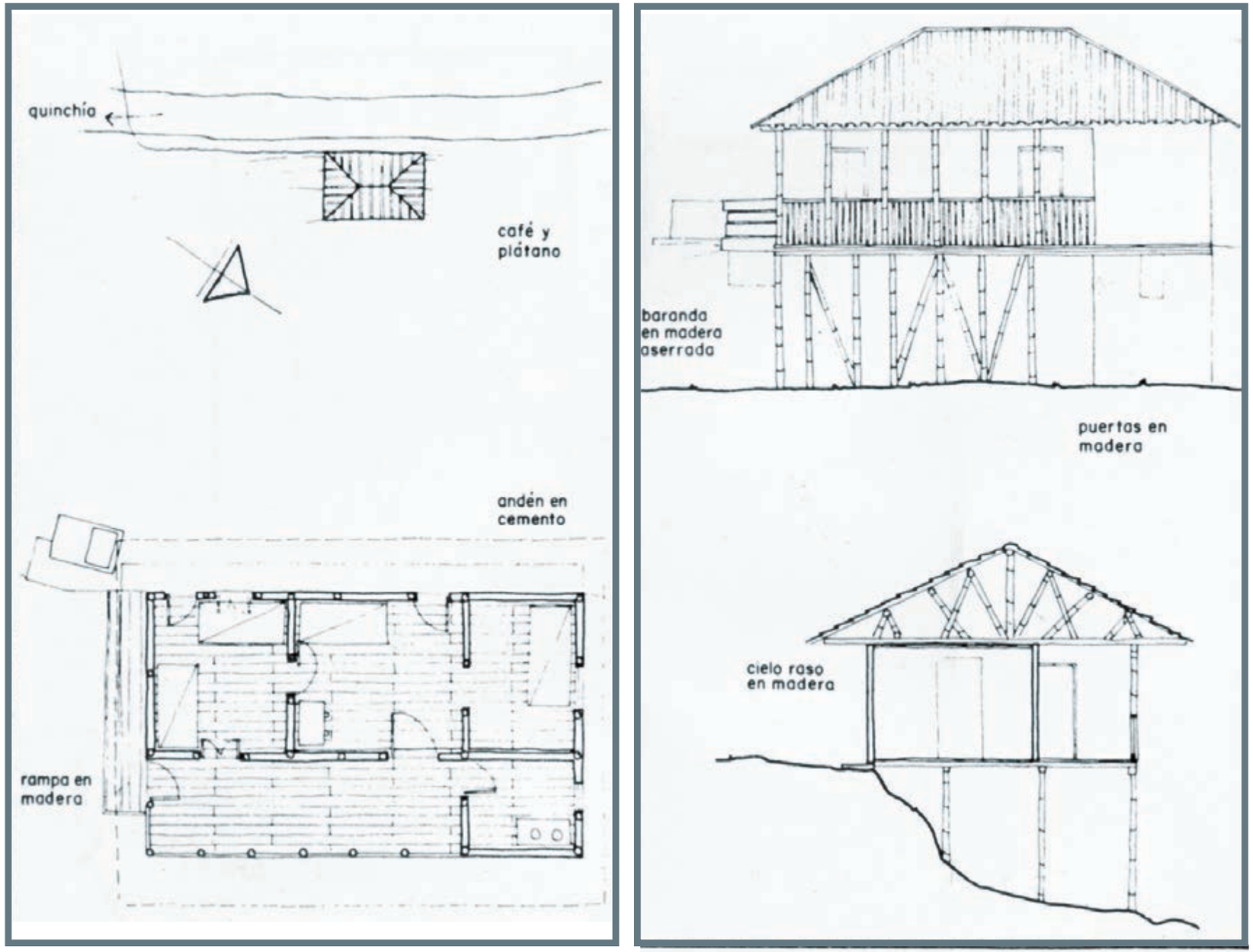
As regards natural heritage, in addition to the Tatamá National Natural Park, the department is the cradle of the Otún-Quimbaya Flora and Fauna Sanctuary. This national environmental reserve was declared so in 1996; it covers an area of 489 hectares and is situated at 14 km from the urban centre of Pereira (Risaralda). The area houses three groups of Howler Monkeys—a species representative of the national fauna and, unfortunately, under the threat of extinction—the Spectacled Bear, the the Mountain Tapir, eagles, deer, and a diversity of birds. People have also reported the presence of Blue-billed Curassows and peacocks, and an abundance of Humming Bird and eagle species, which make bird-spotting a popular visitor sport. Risalralda, situated in the heart of the pre-Hispanic territory of Quimbaya, also houses important environmental reserves and departmental and local protected areas including:

- Otún River
- The Consota River
- The Campo Alegre and Campo Alegrito Rivers (situated in Risaralda and Caldas)
- The Batero Mountain
- The Ucumari Regional Natural Park
- La Nona Forest Reserve



Some samples of the diversity of flora and fauna in Risaralda.

Fonseca and Saldarriaga[62] also carried out their research into the architectural features in this area. Data was collected from 1,099 dwellings with 1,146 buildings. The detailed sample collected data from 46 dwellings with 45 buildings. The results in this zone are similar to those from other departments, thus highlighting the homogenous architectural and urban character of the six zones selected to be the Principle Zone of the Coffee-Growning Cultural Landscape: dwellings of one building with a single axis and corridor dominate, followed by dwellings of two axes at an angle.



An example of a rural home. Area 50 square meters. Vereda Santa María, Quinchía municipality, Risaralda. As published in Fonseca and Saldarriaga (1984).

62. Fonseca and Saldarriaga, 1984

Valle del Cauca[63]

River Cauca, the second most important river in the country.

The Valle del Cauca department extends over 22,140 Km^2: equal to 1.94% of the total area of the country. Approximately 38% (841,320 ha) of its territory is in the Pacific region, and 62% (1'372,680 ha) in the Andean region. Due to its location and environmental offer, the department stands out nationally for its agro-industrial potential. Traditionally, the area has been an important centre for sugar cane production, whereas more recently there is a growing sector of bio-fuel production in the low areas of the Cauca River valley. Although coffee does not play such a significant role in the agricultural sector as it does in the other PCC departments, its importance lies in the socioeconomic impact it has in rural mountain areas.

Of the 42 municipalities, 39 are in some way related to coffee growing. The area occupied by this crop lies along the West and *Central Cordillera* foothills, with the largest coffee dominance in the northeast of the department (*Central Cordillera*), in the municipalities of Alcalá, Ulloa, Caicedonia and Sevilla.

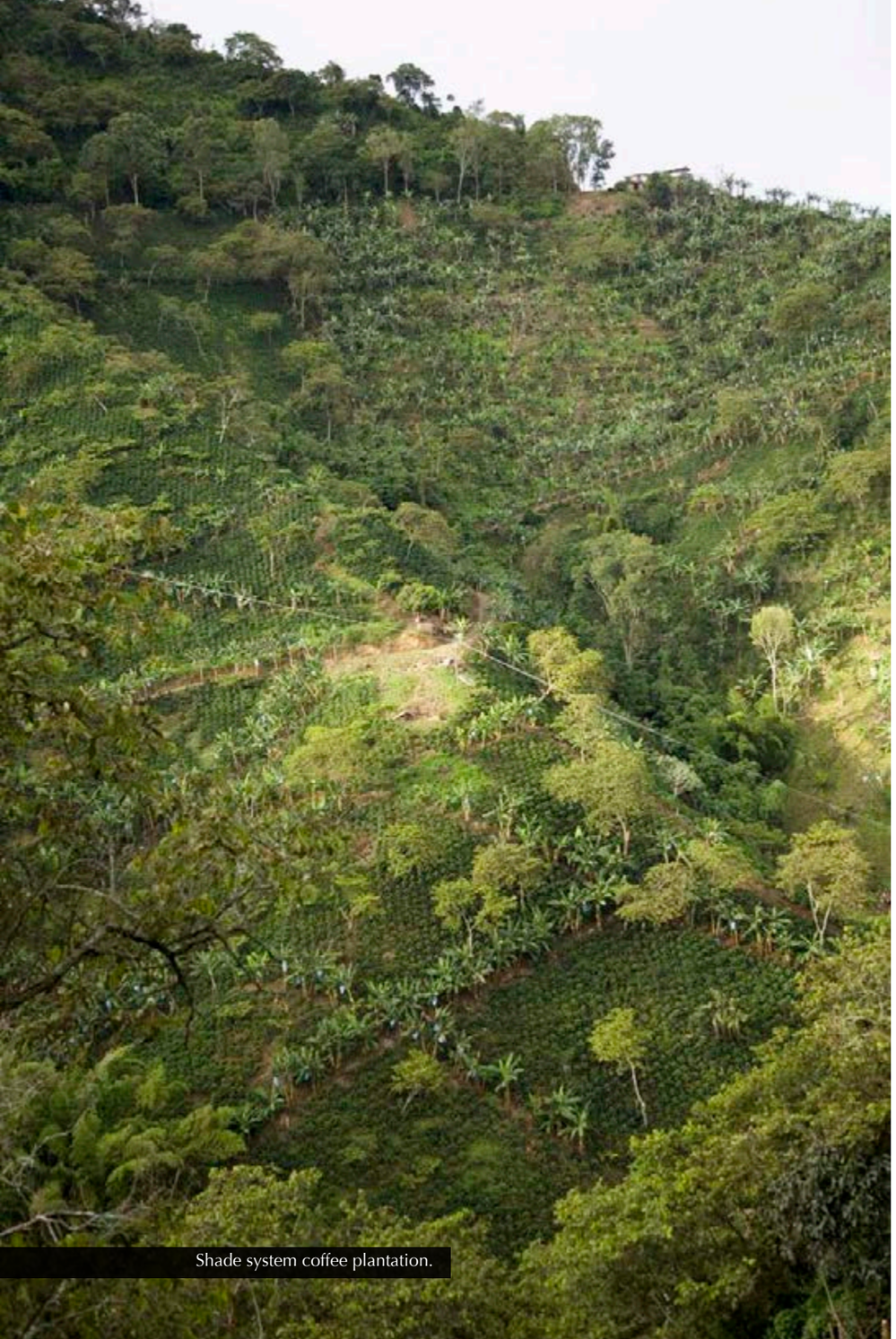
63. This section is based on Valle del Cauca's technical team final report, entitled, "*Definición de la muestra excepcional del Paisaje Cultural Cafetero en el departamento del Valle del Cauca*".

Panoramic view of coffee growing region in Valle.

Trujillo, Valle.

The Inhabitants in the north of Valle have ancestry and culture similar to the other departments that are part of the PCC.

Valle produces approximately 1'200,000 60kg bags per year of green coffee, which equals almost 11% of the coffee harvested in the whole country. The department houses 20,500 coffee growers, who cover approximately 77,500 hectares in coffee plantations. Of these 9,708 hectares are in the PCC Principal Area and 9,016 in the Buffer Zone. The municipalities that concentrate the largest surface area of the Principal Area are as follows (in descending order): Sevilla, Trujillo, Caicedonia, Riofrío and El Cairo, and to a lesser degree Alcalá and Ulloa. These municipalities have a deep-rooted coffee tradition, and their significant ancestral, natural, architectural, landscape and cultural legacies that clearly reflect the exceptional PCC attributes. The part of the Principal Area situated in Valle covers 29,828 hectares, situated in nine municipalities.



Shade system coffee plantation.

As regards the type of coffee growing, the landscape's Principal Area presents varying degrees of technification, vegetation coverage, and crop renewal. In terms of types of coffee production, 46% has some level of shade (total or partial), while the remaning 54% operate as full-sun systems. Data from the Coffee Information System, SICA, reveals that the average age of the technified coffee trees is 4.7 years, which reflects an adequate level of crop renewal.

The Valle department is privileged for its varied environmental offer.

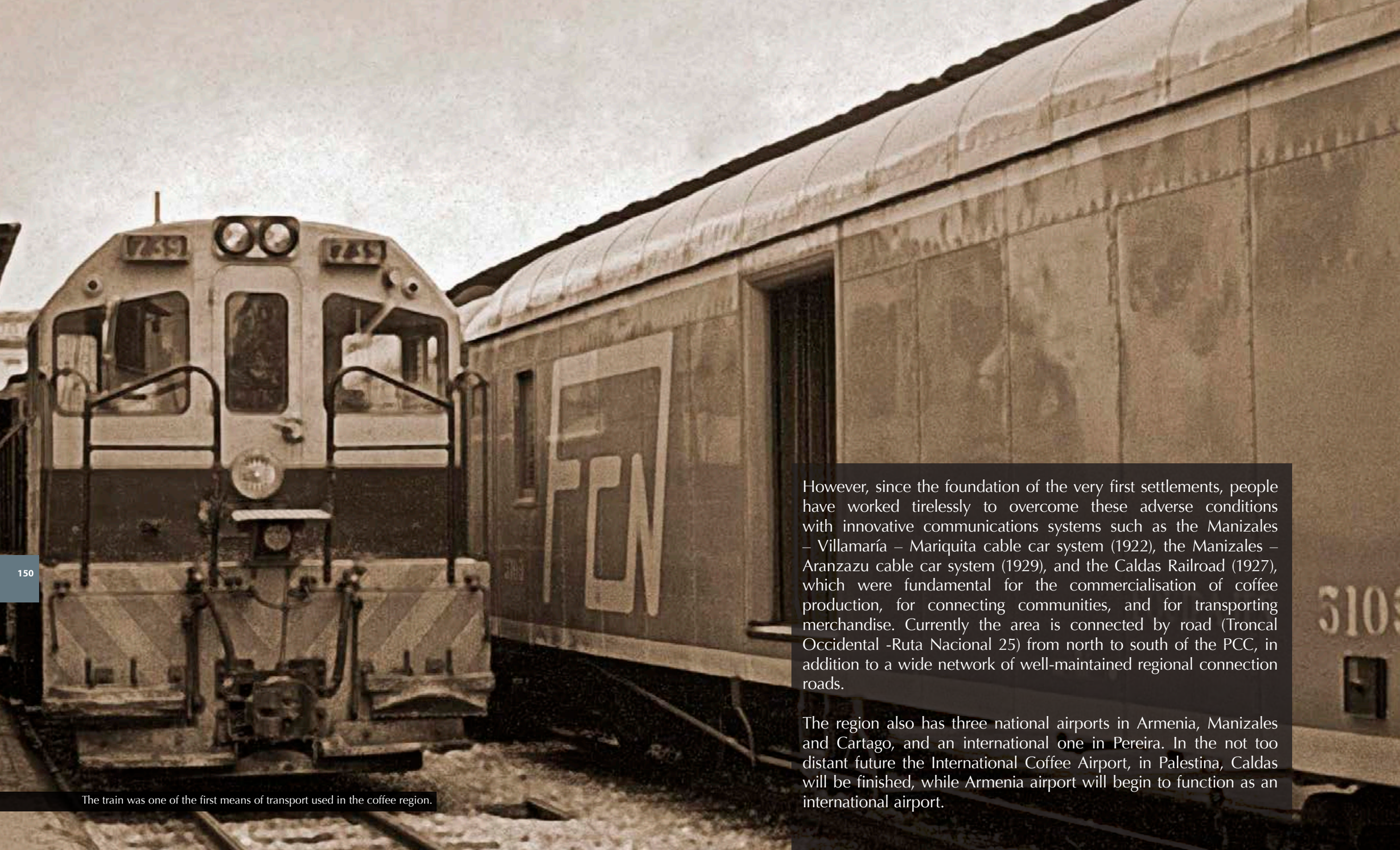
Valle del Cauca houses areas in the National System of Protected Areas that are strategic for environmental conservation. There are currently six protected areas: *Las Hermosas* National Natural Park; *Los Farallones* National Natural Park; *Tatamá* National Natural Park; the *Sonso* Lagoon; Yotoco Forest, and the Pacífico Forest Reserve: one of the largest in the country with an importance influence on environmental equilibrium in the PCC area of influence. The reserve houses a variety of natural forests that plays a crucial ecologic role in protecting the atmospheric dynamics, water quality, and the region's wild species.

The wide variety and scenic beauty in Valle del Cauca due to its climatic diversity and topography gives way to a rich range of ecosystems, and ethnic and cultural groups. These characteristics generate a wide range of environmental goods and services which, in turn, are an important element of the uniqueness of the PCC.

VII) Transport Infrastructure

Although the topographic conditions of the PCC favour the production of a high quality mountain Arabica coffee, the high slopes and access difficulties simultaneously impose great challenges as regards the communities' communication and development.

The Chiva is a widely used means of transport in the region.



The train was one of the first means of transport used in the coffee region.

However, since the foundation of the very first settlements, people have worked tirelessly to overcome these adverse conditions with innovative communications systems such as the Manizales – Villamaría – Mariquita cable car system (1922), the Manizales – Aranzazu cable car system (1929), and the Caldas Railroad (1927), which were fundamental for the commercialisation of coffee production, for connecting communities, and for transporting merchandise. Currently the area is connected by road (Troncal Occidental -Ruta Nacional 25) from north to south of the PCC, in addition to a wide network of well-maintained regional connection roads.

The region also has three national airports in Armenia, Manizales and Cartago, and an international one in Pereira. In the not too distant future the International Coffee Airport, in Palestina, Caldas will be finished, while Armenia airport will begin to function as an international airport.

b) History and Development

There are four distinct periods in the PCC's historical process. First is the pre-Hispanic or pre-Columbian epoch; second, the Antioquian colonization; third, the expansion of coffee production; and lastly, the fourth period corresponding to the technification of coffee production. Although the Landscape has undergone transformations in each period, the available evidence records the changes that took place particularly from the second period on. Throughout these periods, coffee growers and their institutions have dedicated themselves to finding technologies, techniques and systems that would render the activity sustainable. This search—an increasingly important issue in the institutions' guidelines—is one of the principal axes of Cenicafé's research, and one that will mark the future of the landscape. This trend is further analysed in the last section of this chapter.

I) Pre-Hispanic Past

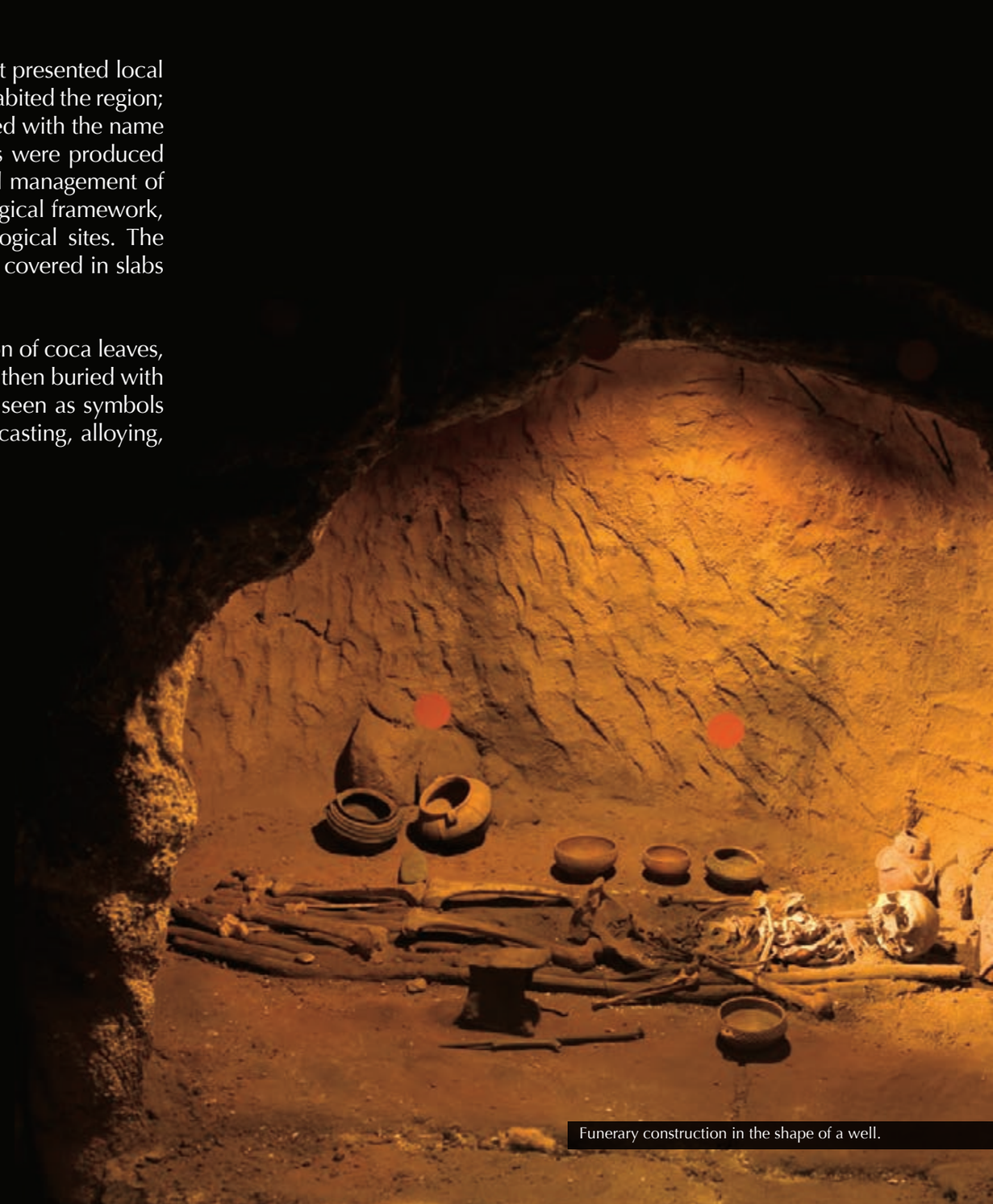
The central-west region of the country—home to the PCC—was occupied by primitive hunter gatherers approximately 10,000 years ago. Around 500 A.C. the inhabitants practiced agriculture and around 100 D.C. they worked gold with sophisticated techniques. Around the year 800—due to unknown factors—these societies underwent profound changes. The Spanish invasion in the XVI century, led to the physical and cultural disappearance of most of the groups that lived in the Cauca River Middle Valley. War, disease, and mistreatment rapidly decimated the existing population, whilst the regime of control over land and indigenous communities, evangelisation, and the re-location of towns disintegrated their organization and transformed their culture.

The pre-Hispanic groups that occupied the region in the XII and XIV century D.C. used the area's natural geomorphology to establish housing units with no organised pattern, and methods of resource appropriation framed within agriculturally productive economic systems (Uribe, 2003). The occupation model points to low-density small settlements of family units, in areas close to plantations of corn, bean, yam, etc. Since then, communities have relied heavily on *Guadua* as a commodity for construction.

Mid Cauca prehispanic stllers exhibition museum centers.

When the European conquerors arrived they were faced with a numerous population that presented local differences in language and culture. The Quimbaya people were one of the groups that inhabited the region; however, traditionally, all the archaeological objects found in the region were denominated with the name Quimbaya and have been identified as such, despite the fact that many of the artefacts were produced by other groups and at different times. The pieces collected so far reveal a sophisticated management of metals, ceramics, and textiles, but it has not been possible to establish a precise chronological framework, among other reasons, because of the continuing practice of tomb raiding in archaeological sites. The funerary structures found are in the shape of pits with a lateral chamber or constructions covered in slabs (shaft tomb).

The Quimbaya goldsmiths made ornaments to adorn the body, objects for the consumption of coca leaves, musical instruments, and tools. Most of the pieces were fabricated for the chiefs and were then buried with them when they died[64]. The colour, smell, shine, and sound of this coveted metal were seen as symbols of religion, power, distinction, and the goldsmiths refined the outstanding techniques of casting, alloying, hammering, embossing and polishing of the era.



Funerary construction in the shape of a well.

64. The Scribe Pedro Sarmiento, accompanying Jorge Robledo, registred the burial of a cacique in the document: "Account of Captain Jorge Robledo's voyage to the provinces of Anserma and Quimbaya", around 1540, as follows: "The way in which they bury an important man when he dies, in a hidden corner in the fields… first they put him between two fires, on a type of grill, to remove the grease… and then , when he is bone dry, they paint the body red... and then they dress him in all his jewels that he wore to ceremonies when he was alive and then they wrap him in cotton sheets that they prepared and kept for the occasion for a very long time… and then, they take him to the tomb they had already made. There, they kill two of the Indians that served him in life, and put one at his feet and another at his head. The tombs are very deep, and inside there are vaults that are closed with logs that will not rot… there they place their arms and seats that they used, the cups they used to drink out of and dishes full of delicacies they liked to eat. They say that they do this so that the *cacique* can eat at night, and so they put their ears to the ground for many nights after the burial to see if they can hear anything".

II) The Antioquian Colonization[65]

The Antioquian colonization began to take shape in the second half of the XVII century, when nomad groups of miners began to emerge as a result of the decadence of the large mines granted by the Spanish Crown. The new miners—who typically used family-based workforces and exploited mines without the concession from the Crown—decided to flee the protection of the Spanish and try their luck, looking for their own fortunes. The new mining peak led to massive migration of the workforce, which debilitated the region's large plantations, and promoted greater social mobility.

The growing necessities of the population exerted pressure on the agricultural front, which, in the early XVIII century, expanded from the neighbouring areas of Medellín—the capital of Antioquia—to colder, less fertile regions like Marinilla and Rionegro. The scarcity of land and reduced agricultural productivity generated a crisis that in turn affected all the department's productive sectors by the end of the century.

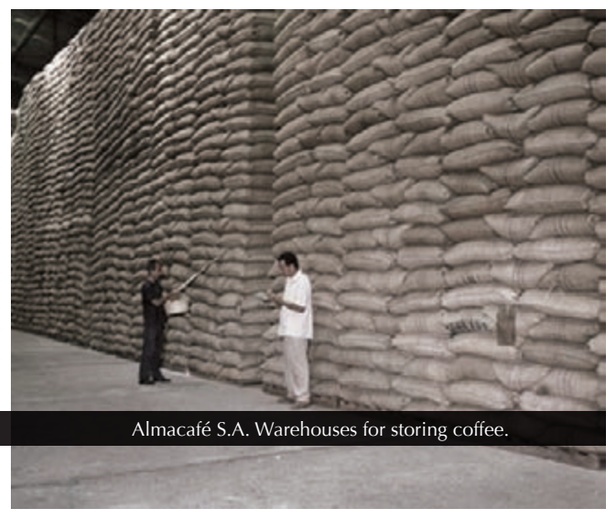
Faced with such crisis, Judge Mon y Velarde[66] adopted drastic measures that would make the colonization process more dynamic: he conceded free access to limited extensions of land for founding agricultural towns and settlements close to the mining centres, without consideration of the previous rights enjoyed by the landowners. These measures led to the foundation of new towns, the opening of bridle paths, and an increase in agricultural production; thus, establishing the model for the colonization of optimal coffee producing areas such as Aguadas, Salamina, Aranzazu, Manizales, Pereira, Quindío and Tolima.

The colonization process was to establish settlements and their surrounding agricultural zones simultaneously. By 1819 the area around Salamina, founded in 1825, had begun to be occupied. In the process there were also fights between independent settlers and those who had received licensed security of tenure through concessions. López Toro[67] has shown that while the Antioquian colonization had a colective character in the first phase (1800 – 1880), it was of a more individual character in the second, due to the support of Law 61 issued in 1874. This collective character contributed to the homogeneity that characterizes most of the towns of the Coffee-Growning Cultural Landscape and makes them unlike settlement processes both in Colombia and in the world.

During the process of Antioquian Colonization, the founding of towns at relatively close distances caused a network on both banks of the Cauca River; the development of roads and railways created a solid geographical and cultural network for the region, which has caused much influence on the culture and on the economy of the entire country. During this 120-year period, 86 towns were founded in an area of over a million hactareas[68]. The presence of an indigious population with its own traditions is reflected in the presence of reservations in Riosucio and Quinchía, not just in the tradition of the cultivation of bamboo, an indigenous cultural traits adopted in the constructive techniques in many towns and rural dwellings of the Coffee-Growing Cultural Landscape. Without doubt, this was a dynamic and intense colonization process whose integration with the landscape and use of ancestral knowledge generated a new productive landscape in an exceptionally short period of time.

65. Based on López (1970).
66. Juan Antonio Mon y Velarde, Regal Audience Judge and visitor to the Antioquia province between 1785 and 1788.
67. Quoted in Fonseca and Saldarriaga, 1984.
68. Ibid.

A Model of a town founded and constructed by Antioquian colonizers. Calarcá, Quindío.



Almacafé S.A. Warehouses for storing coffee.

III) The Expansion of Coffee Production [69]

Since the end of the XIX century, coffee production became the most important element of Colombia's economic development. In fact, this activity emerged strongly as a production alternative after the decadence of tobacco, quinine and indigo and interested all sectors, from the communities involved in land exploitation to the banks, trade partnerships, and shipping companies, amongst many more (Machado, 1977).

Although the colonization process established the bases for the development of coffee production, an economic trigger was necessary to guarantee its consolidation. In the first few years of the colonization, agricultural production was limited to plantain, corn, and beans. This changed drastically after the measures of reconstruction propelled at the beginning of the XX century by the then Colombian President Rafael Reyes, to overcome the ravages of the Thousand Days War that ended at the beginning of the XX century. These policies were based on fiscal centralisation, a protectionist trade policy, and the State's promotion of exports such as sugar, bananas, and, of course, coffee.

69. Based on Universidad Nacional et al (2006) and López (1970).

The promotion of coffee production modified the productive profile of the colonizers. Coffee was ideal for the new economies because it did not require great capital investments, it combined well with subsistence crops, and was durable and easily processed.

Thus, a solid expansion of small-scale coffee production conducted by the settlers was underway, leading to new types of social and production organization. In fact, the process increased the purchasing power of many of the coffee producing families; it rendered the internal market more dynamic, and decisively propelled the Colombian economy, generating property distribution that is still visible today in the landscape.

Given the family-based working structure, coffee production in the central-west region of the country was less vulnerable to the fluctuations produced by the international price crises and the Thousand Days War (Machado, 1977). In 1913, the region was already producing 43% of the coffee produced in the whole country. Gradually, Colombia's Eastern Coffee region, characterised by the dominance of large-scale coffee haciendas, slowed down significantly, while the central-west region where the PCC is located developed in leaps and bounds, establishing a class of business minded medium-scale land-owners.

Coffee growing family

Constant effort is put into recuperating regional memory and history.

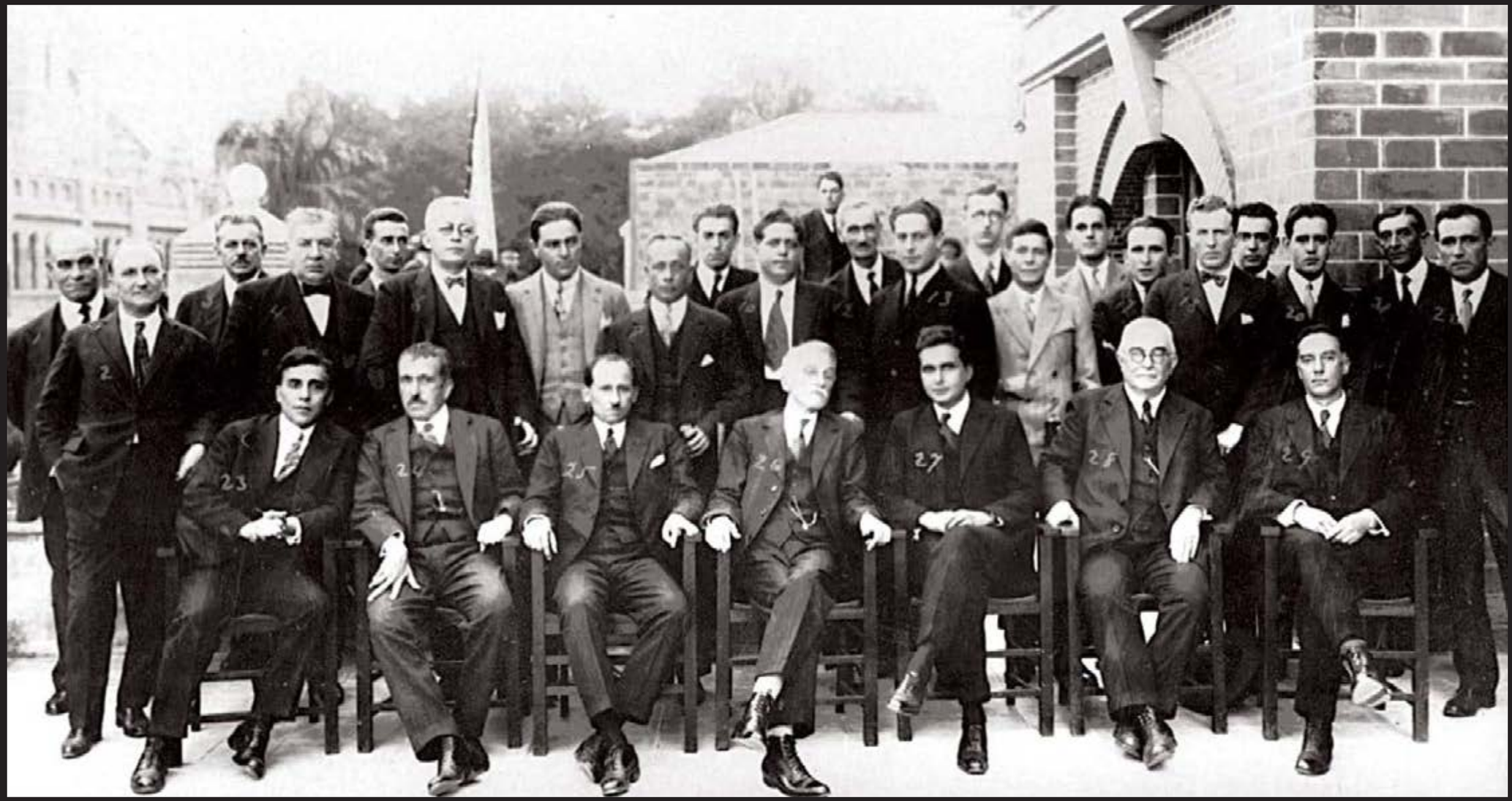
The landscape took on more ample dimensions thanks to the significant growth in agriculture and the development of the road system. The region's communications network was modernised and it adopted a structure geared towards the requirements of the coffee export business, with which the bridle paths gradually changed into modern roads. In the twenties and thirties of the past century, 100km of railroads were built to link the region with the Pacific Ocean in the west, and a cable car system was set up to open the way to the Magdalena River in the east, and along the river to the Atlantic Ocean. The thirties brought with them a strong dynamism to promote the development of a road system that gradually took shape and led to the building of the Magdalena Road and the north of Caldas one, that links up the Medellín region. A large part of the roads was paved in the forties, and the same decade saw the construction of the Santágueda Airport and the beginning of electrical system in the region with the construction of the Caldas hydroelectric powerstation and the necessary infrastructure for the generation and distribution of energy. As pointed out by Albeiro Valencia, "Coffee production created an internal market and linked the different parts of Caldas[70], integrating them into the national economy and connecting the department to the world" (PNUD, 2004, p. 40).

70. It is worthwhile to note that at the time the territories of today's Caldas, Quindío and Risaralda departments were known as one single territory called Caldas.

At that point, the landscape revealed intense deforestation, but the varieties of coffee plantations produced a different type of tree coverage, now characteristic of the region. This still exists, as a salient percentage, and is different from the coverage associated to primary forests. Other characteristics of the region included a combination of small plots with other larger *haciendas*; populated rural centres that fitted into the landscape as much as the individual dwellings; a consolidated and varied road network; the industrial equipment in the larger farms; and the blossoming urban centres that were gradually being modernised.

Despite the relative dynamism of coffee production at the beginning of the XIX century, it still faced far-reaching challenges in terms of long-term competitiveness which included a lack of technical assistance, the necessity to improve quality, the difficulties of trading in international markets, and the lack of credit for working capital, among other problems. This situation brought together country's leaders in the coffee arena, for the first Coffee Growers National Congress on the 27th of June 1927. Later, with the support of Colombia's Government, they created the Colombian Coffee Growers Federation (FNC). Since then, this institution has dedicated itself to improving living conditions for coffee growing communities using collaboration, participation, and innovation mechanisms.

The coffee growers have always been trying to ensure the production of a top quality coffee. A soil sample which shows an adequate level of fertilisation.



First Coffee Growers Congress, 1927.

Given the macroeconomic importance of coffee in the country and the necessity to fulfil the commitments of international agreements that for decades regulated the international coffee trade, the Colombian Government created—with the help of the coffee growers—the National Coffee Fund. This para-fiscal account, sustained by contributions from coffee producers, is the principal source of resources for goods and services provisions to exclusively benefit Colombian coffee growers. These resources are administered by the FNC according to a Management Contract signed by the National Government.

Coffee growers watch a demonstration of how to adequately fertilize th coffee trees some decades ago.

This particular contribution scheme generated a permanent flow of resources to finance the various programmes run by the coffee institutions. The provision of public goods for the coffee growers financed by the contributions made by the producers can be illustrated with the case of Cenicafé. Thanks to this funding, the PCC coffee growers are supported by tens of scientists and researchers who work ceaselessly to deal with the main requirement of coffee production: the development of new varieties, technological packages to combat coffee plagues, and planting techniques that avert land deterioration (erosion, river pollution), etc. Over the past few years, they have also been implementing important research into the coffee genomee.

Coffee Growers Cooperative purchase point.

The para-fiscal resources also make it possible to establish a comprehensive network of points of purchase in the coffee regions, guaranteeing the purchase of harvests and, thus, increasing producers' share of the price paid by consumers. In times when prices have been high, significant savings were made in order to improve the PCC coffee growers' quality of life by investing in a roads network, electricity supply, health centres, schools, etc[71].

71. For more information on these and other programs supported by coffee institutions please see www.SustainabilityThat Matters.org

IV) The Technification of Coffee Production [72]

This period took off in the 1960s and was determined by the development of new rust resistant varieties and a search for greater productivity on farms. As a result, a portion of the traditional plantations, distinguished by long productive cycles, low density plantations, varieties of tall trees, the use of shade trees, and low productivity were replaced by technified and denser plantations with organised layouts and smaller trees, less shade, and greater productivity. Given the greater yield per hectare, technified systems require more intensive labour and a greater use of fertilizers.

Traditional coffee plantation. Calarcá, Quindío.

72. Based on Universidad Nacional et al (2006).

Aside from the changes in the landscape, following are other changes brought about by technification between 1970 and 1993-97[73]:

- Modification of plantation size: although this hardly changed at all in Caldas and Risaralda (two of the PCC departments), it did change in Quindío and Valle, with reductions of up to 20% and 30%.

- Changes in the proportion of types of plantations (traditional vs. technified): the percentage of technified plantations increased from 5% in 1970 to 80% in 1993-1997[74].

- Modified number and size of farms: due to the land fragmentation process the number of farms grew significantly (by a huge 90% in Caldas), while the size of individual farms reduced considerably.

- Changes in the vegetation cover: the most notorious changes were seen in the reduction of grasslands and the increase of other crops, forests and weeds. As pointed out by Guhl (2004), these changes suggest that as the landscape is going through a process of agricultural intensification, it is becoming increasingly heterogeneous.

It is true that these transformations gave way to a certain degree of environmental deterioration; however, it is important to highlight the fact that the coffee institutions are increasingly committed to making coffee production more environmentally friendly with a technology package aimed at protecting the environment throughout the different stages of coffee growing, harvesting and processing. In the same way specialty coffees—particularly the sustainable coffees—are based on an ideology of respect for the environment. Following is a deeper analysis of the developments of the coffee institutions that look to support the conservation of coffee ecosystems and, thus, the sustainability of the PCC.

73. Guhl, 2004; Rincón et al, 2004; Vallecilla, 2005.

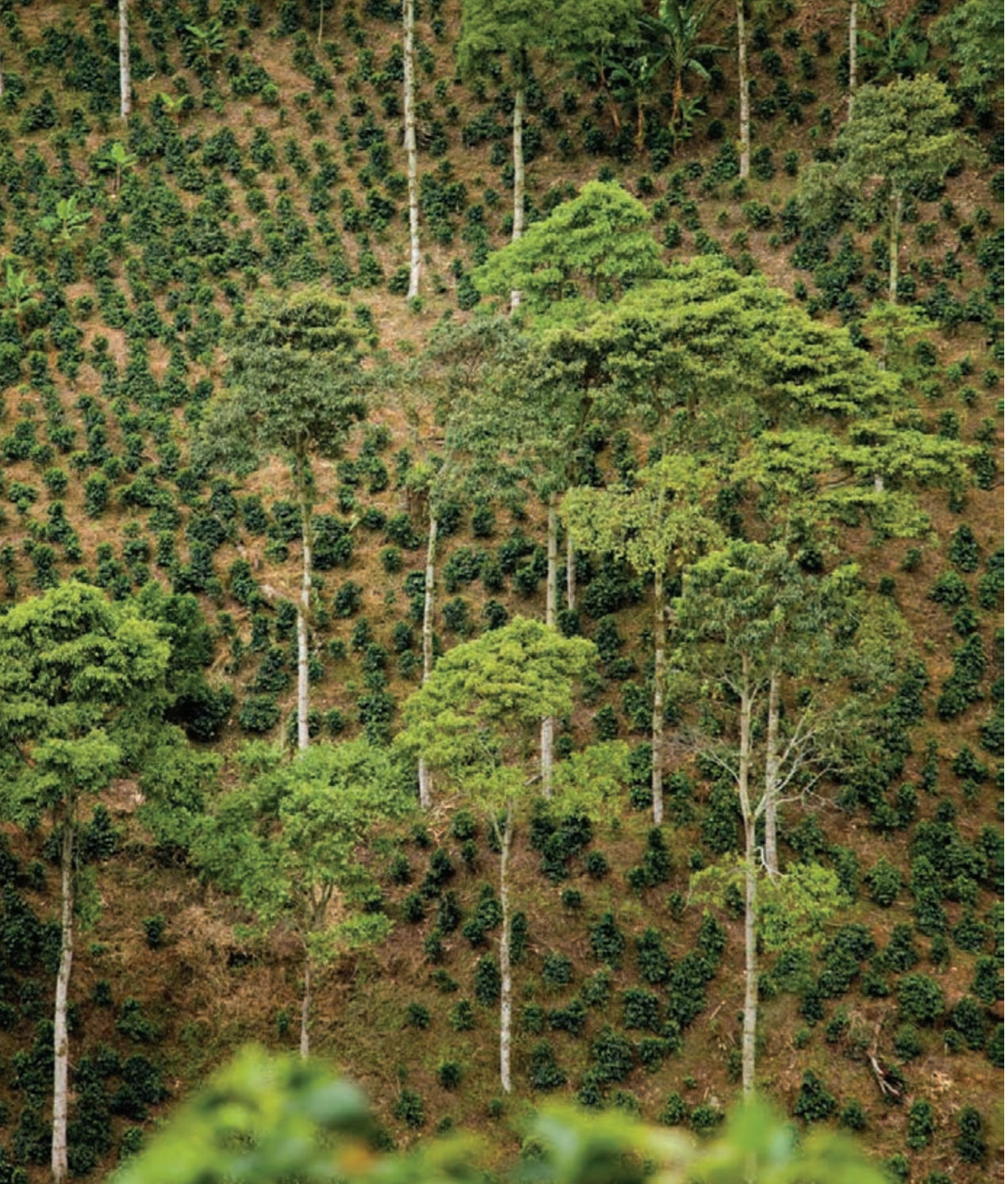
74. Estimations based on information at national level (taken from Guhl, 2004), and for the Caldas department (Vallecilla, 2005).

The richness of the soil, the slopes, and the rainfall patterns, mean that the PCC region offers optimal conditions for producing top quality coffee.

V) Sustainable Coffee Production[75]

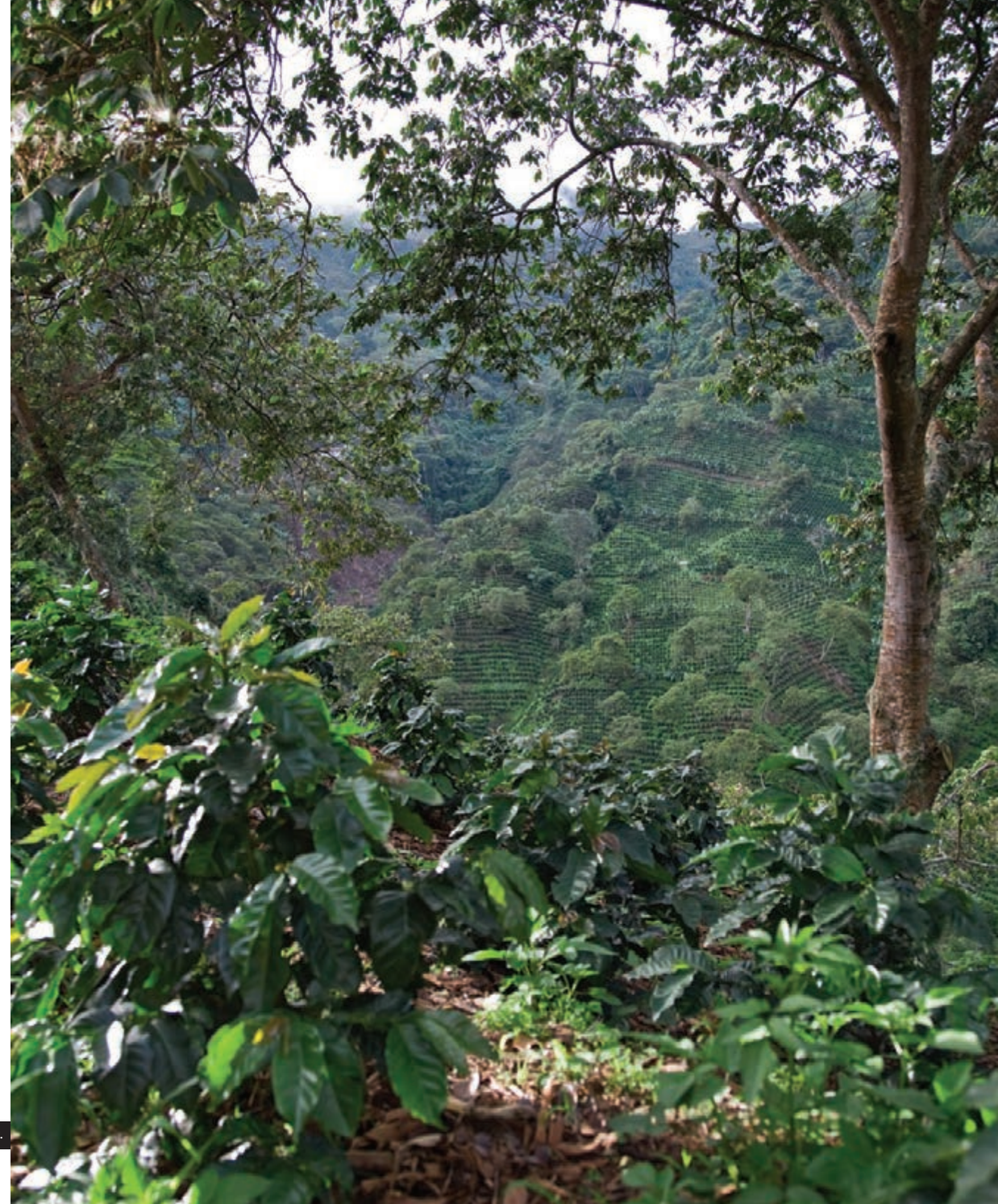
The soils of the PCC are rich in organic material—generally derived from volcanic ash—. The area has steep slopes situated at altitudes of around 1,200 and 2,000 masl, and a climate with an average temperature of 22°C all year round, and a rainfall pattern ranging from 1,200 to 3,000 millimetres evenly distributed throughout the year. This rainfall is one of the most important natural resources for optimal production of mild Arabica coffee.

75. Text by Gabriel Cadena, former director of Cenicafé (2009).



Although the soil and climate conditions are advantageous for coffee growing, they also generate risks for the environmental sustainability of the crop. The soil, given the steep slopes and the high rainfall, is susceptible to erosion and earth removal. For this reason, since its foundation in 1938, Cenicafé has dedicated itself to the physical, chemical, and microbial study of soils in the Colombian coffee region, emphasizing the study of erosive phenomena and the development of conservation strategies.

The results of these studies have allowed the FNC to put forward national soil-conservation campaigns, which they are looking to spread with the support of FNC's Extension Service, in order to encourage coffee growers to adopt conservationist practices. These include the conservation and planting of shade trees; planting coffee trees in level curves or cross-slope planting; planting hedges as boundaries; and adopting corrective practices related to water conduction, drainage or the construction of physical barriers to avoid land movement. Soils conservation is the fundamental component of agricultural sustainability; its absence impoverishes the farmers, favours the exhaustion of water supplies, and goes against biodiversity conservation.



The peaks of the Andes offer ideal conditions for cultivating coffee.

The coffee growers are committed to conservation through each step of the process.

On the farm, coffee is processed using wet-milling techniques, fundamental for quality preservation. This process begins by harvesting the ripe fruit—which in Colombia is done manually—and taking the harvest to the *beneficio* station. The coffee harvest is one of the principal generators of well-paid employment, and is responsible for employment stability in the region. Over the course of a few days in a process that uses labour, energy and water, the ripe fruits are depulped, demucilaged, washed, and dried until the ripe cherries are turned into dry parchment coffee[76]. The ration of ripe fruit to parchment coffee is 5 to 1; that is, every 5kg of cherries gives 4kg of subproducts[77] and only 1 of parchment coffee. This large amount of residue that is produced in the process is of utmost importance from an ecological point of view.

76. Green coffee bean contained in the protective skin (parchment).
77. Secondary products obtained from the *beneficio* process.

Cenicafé has worked ceaselessly to optimise the beneficio process in terms of its environmental impact. As a result, they have developed a set of practices that reduces the amount of water traditionally used for the process by 95%, the biological pollution by 92%, and gives way to the positive use of subproducts. In the Becolsub module developed by Cenicafé, the ripe fruits are depulped without using water, they are demucilaged, and then washed with less than a litre of water per kilo of coffee; while the pulp and mucilage are turned into useful products for coffee production, food, and bio-fuels. Thus, thanks to the scientific and technological advances, the pulp can be turned into organic fertiliser using the Californian red worm. The organic fertiliser can be used for producing environmentally clean planting material or as a substitute for mineral fertilisers. The pulp can also be used as a substrate in the cultivation edible fungus (Pleurotus, Shitake), for human consumption. Mucilage, on other hand, can be used as complementary food for the offspring of farm animals; and, finally, both pulp and mucilage can be used to produce bio-ethanol fuel.

Cenicafé has developed scientific and technological advances so that the beneficio process and the management of waste products are environmentally friendly.

Once the coffee has been processed it has to be dried to a maximum of 12% humidity to guarantee that its taste and aroma are not affected during storage. Cenicafé has developed a sun-drying system called parabolic drying which avoids the use of fossil fuels that could negatively impact environmental sustainability in the PCC. Finally in the threshing[78] of parchment coffee another subproduct—*sisco*—is produced, which can be used as fuel for mechanical drying processes as a substitute for diesel, coal or gas.

We can proudly say that Colombian coffee is produced with ***zero residue***: it is cultivated without the use of artificial irrigation[79], economising on water in the wet processing (under a litre of water per kg of coffee); all subproducts are put to good use (pulp, mucilage, *sisco*) to produce natural fertilisers (humus), cultivate edible fungus (Pleutrotus, Shitake), feed farm animals (pigs), produce bio-ethanol, and to substitute fossil fuels in solar or mechanical coffee drying (*sisco*).

78. This process removes the parchment, leaving green coffee beans ready to be traded internationally.
79. A minimum of 1,200mm of rainfall are needed per hectare, per year.

The parabolic coffee dryer is another of the tools designed to guarantee coffee quality.

Among the most important achievements of the growers collective action is the development of practices to ensure phytosanitary control for the coffee trees.

The implementation of phytosanitary measures has also led to significant advances in environmental sustainability. Pest, disease, and weed control is obviously fundamental for healthy coffee plantation; however, in modern agriculture, far too often, chemical products are used to control these negative elements, which when used indiscriminately, tend to damage the environment, human and animal health, and, in turn, the economy and the biodiversity. Thanks to research undertaken by Cenicafé, the PCC coffee growers are able to use ecological alternatives that minimise the negative effects on the region's ecosystems.

Colombian coffee growers have at their disposal a number of varieties of Coffea Arabica (Colombia, Tabi and Castillo) that are resistant to the main coffee disease (Orange Rust – Hemileia vastatrix), and which do not require chemical fungicides. Cenicafé has also developed techniques to avoid the use of fungicides for other diseases such as the Leaf Spot (Cercospora coffeicola) through adequate nutrition of the plantations, or the Black Canker (Ceratocystis fimbriata) disease, by cultivating varieties that are resistant to it, or through the use of biocontrolers to manage putrefaction in germinators (Rhizoctonia solani).

The Castillo variety is rust resistant.

As regards insects, thanks to the ecologic balance of the coffee region's ecosystems, the only insect considered economically dangerous for the plantations is the coffee berry borer (Hypothenemus hampei). Cenicafé has developed the Integrated Pest Management programme (IPM), which involves cultural management (harvesting the ripe fruits), biological management (use of fungi and enthomopathogenic nematodes, natural controllers, predators, and entomoparasites), and monitoring of pest incidences for focalised control. Thanks to these practices, the coffee berry borer can be controlled without having to resort to toxic substances that affect the fauna, including the natural enemies of the coffee berry borer and other insects. Similarly, for weed management, the coffee growers have been taught to select and protect those that do not compete with coffee, which, in turn, favours soil erosion control and the survival of beneficial fauna in the plantations.

Using fungus and insects that are natural enemies to the coffee berry borer has been successful in controling the pest.

The Barranquillo is one of the region's emblematic birds, and is sought after by birdwatchers.

Cenicafé, in collaboration with the communities—in particular children and young students—, has had a great impact in the protection of the biodiversity. Together they have pressed forward participatory censuses of wild birds in order to promote their recognition and protection. The importance of shade trees is also emphasised, as is the protection of microbasins and water sources, and the elaboration of studies to record the population of indicator species such as ants, butterflies, dragonflies, and wild animals such as the Night Monkey.

SURFING

In conclusion, the sum of the efforts made by institutions and producers means that coffee production in Colombia is environmentally sustainable and respects natural resources (soil, water, flora, fauna, microorganisms, atmosphere), employing non-polluting agricultural practices, and minimal use of fossil fuels. These practices allow the long-term conservation of the natural resources and strategic ecosystems of the PCC, within a productive agricultural system that generates welfare and sustainable development for the communities.

PCC coffee growers know that their futures depend on their natural resources, and that is why they are so committed to preserving them.